

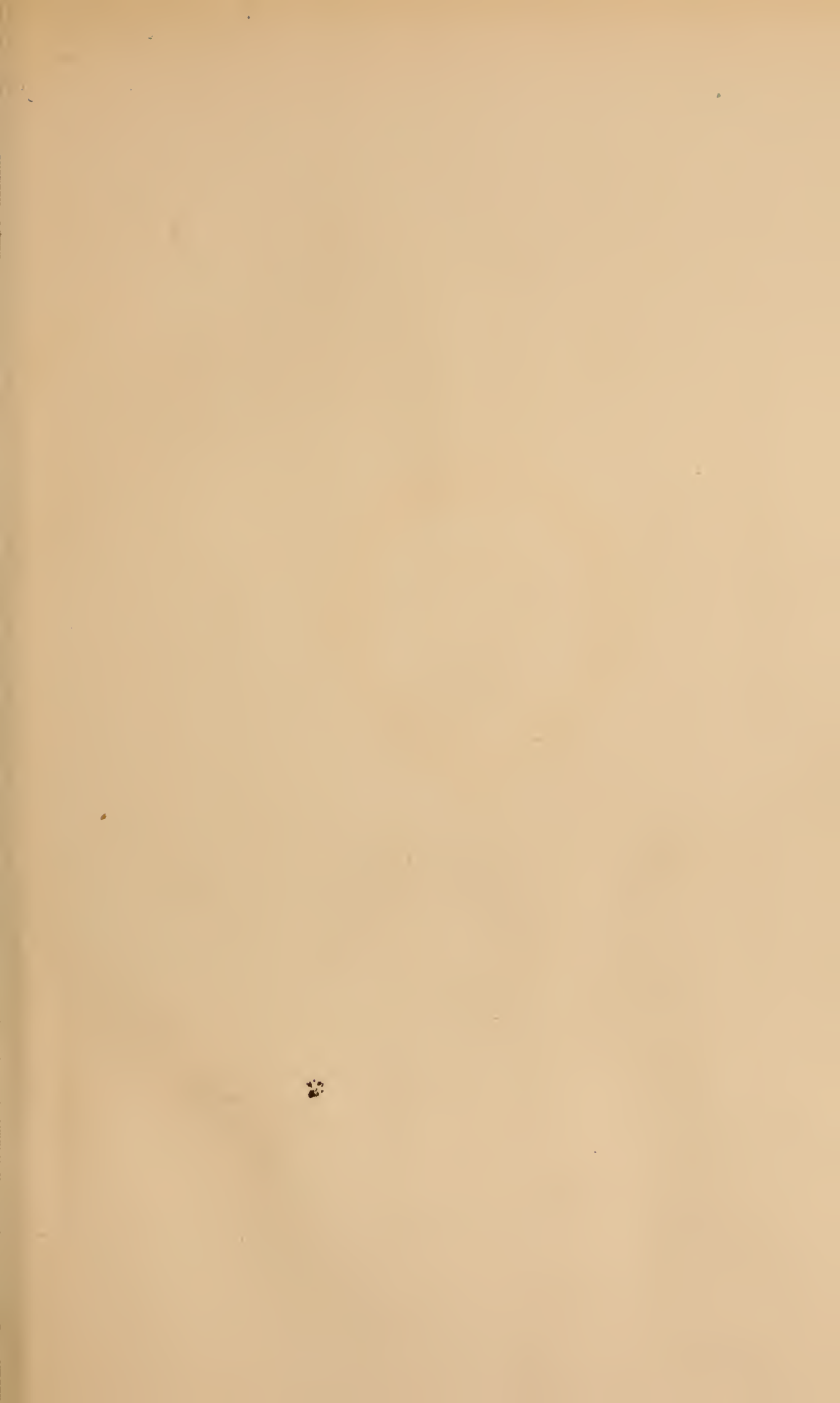
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THE JOURNAL OF
OPHTHALMOLOGY
OTOLOGY AND LARYNGOLOGY.

ISSUED BI-MONTHLY

JOHN L. MOFFAT, M. D., EDITOR.

ASSOCIATE EDITOR :

A. WORRALL PALMER, M. D.

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THE JOURNAL OF OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY.

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EDITORIAL.

WITH this volume will be added a new department, PRACTICAL HINTS, which it is believed will increase the value and interest of the JOURNAL. The editors feel free to incorporate hints and experiences from any source, but will be more than glad to have contributions, if only one item, from any and all of our readers. The appearance of an item does not guarantee its efficacy; these are merely hints that may be essayed in practice if they commend themselves to the judgment of the reader. Should any of them fail in such test, it is to be hoped that a careful report will be sent to the Editor. It is often possible to learn more from our failures than from our successes; we should let others profit by the lesson.

We are glad that the valuable *Index Medicus* is to be revived and placed on a permanent footing; it will be published by the Carnegie Institute in Washington, the subscription being five dollars in advance.

Our department of *Bibliography*, thus rendered superfluous, will be discontinued. During the past two years this has been perhaps our most characteristic feature; some have complimented us upon it as the most valuable. The credit for it is due to the painstaking interest of Dr. W. U. Reynolds, who would have made it much more complete could he have had more space. Our thanks are extended to the New York Academy of Medicine for the privileges

of its library so courteously extended to Dr. Reynolds and others of our staff. The attention of our readers is again called to the fact that any of the journals referred to in our bibliography may be obtained at the library of the New York Academy of Medicine, 17 West Forty-third Street; prices furnished upon application to the librarian.

Symposia on questions of practical interest will be continued as our peculiar feature. More space will be devoted to reports of societies, without neglecting abstracts from current literature and book reviews, but of course the most important part of the JOURNAL will always be the original papers. While the general practitioner will here find papers read before general societies, our aim is to present to our readers brief practical papers embodying experience or original research and addressed to specialists. The intelligent general practitioner will doubtless be more interested in the latter than in the former class.

Letters from our readers will be welcomed expressing criticisms, suggestions, or testifying as to which part of the JOURNAL they find the most, and which the least, valuable and interesting.

PERITONSILLAR ABSCESS.*

N. H. HOUGHTON, M. D.,

Boston.

DURING the past few weeks physicians have been especially called upon to treat various inflammatory diseases of the tonsils, and of these none are more interesting, and at the same time more trying, both to the patient and physician, than peritonsillar abscess.

The anatomy and physiology of the faucial tonsils are still indefinitely understood, but whatever is the function of the normal tonsil, it becomes impaired when the tonsil is diseased.

In a recent paper by Bosworth, read before the American Laryngological Association, the writer takes the ground that the only healthy tonsil is one in which there is no hypertrophy. In other words, the tonsil that can be seen on inspection is not a normal one. He advises the removal of this tumor as he would any other tumor, whether benign or malignant. He considers the lacunæ in the tonsils that lead to the follicles in the body as centers of infection or incubation. The hypertrophy of the tonsil may be general, or it may be confined to different parts, as a basic hypertrophy, hypertrophy of the upper part, or an hypertrophy with adhesions to the pillars, in which the anterior pillar is

*Read before the Boston Homœopathic Medical Society May 1, 1902.

drawn forward so that the full amount of the tonsil cannot be seen. Hypertrophy of the upper part, or "superior pole," of the tonsil, first described by Palmer, "situated high up between the pillars, is the part especially interesting to the otologist, on account of its close proximity to the Eustachian tube, which may become closed by an extension of inflammation."

Enlarged tonsils, with a large number of irregular crypts, are very commonly seen, and are a source of much trouble. Because of the existence of these crypts, the tonsils are subjected to a greater amount of irritation, and are more liable to inflammatory changes. Although it is not intended in this paper to consider the anatomy of the tonsil, one part especially, the supra-tonsillar fossa, which plays a very important rôle in this disease, being the most frequent site of abscess formation, should be mentioned. This fossa, as the name implies, is situated above the tonsil, between the upper ends of the anterior and posterior faucial pillars. Patterson's researches have shown that the extent of this fossa may be downward as far as the inner surface of the lower jaw, and upward and backward into the soft palate. It is also important to remember that some of the uppermost crypts open into it. Grünwald states that what is usually called a peritonsillar or tonsillar abscess is really an abscess in this locality, and he has given it the name of supratonsillar phlegmon.

Formerly it was believed that peritonsillar abscess was caused by dampness, cold, and rheumatism; but to-day it is believed that they only act in a causative way, in so much as they lessen the resistance of the system against infection. It is generally considered now that the disease is caused by various micro-organisms, which are constantly being taken into the throat with food, water and inspired air. These germs, finding the resistance of the tissues reduced by disease, easily enter the tonsil through the crypts and set up inflammatory processes, which extend to the peritonsillar tissues and end in suppuration. In other words, peritonsillar inflammation is most frequently preceded by a

tonsillitis, the inflammation being located in the crypts, and is an extension of the suppurative process in the direction of the least resistance. I think every physician present can recall cases of simple tonsillitis or follicular tonsillitis, which, after two or three days' existence, have gone on to the formation of an abscess; and, again, where to all outward appearances the inflammation was subsiding, when suddenly there would be seen an increase of swelling and painful swallowing, the beginning of a siege of peritonsillar abscess. The germs most commonly found producing this infection are streptococci, staphylococci, and pneumococci. Goodale has reported an examination of eight cases in which sections of the tonsils and peritonsillar tissues were stained and examined under the microscope. All of these specimens were taken from tonsils in an active state of inflammation, from two to seven days' duration, and, though in most cases there was no clinical appearance that would lead one to determine the presence of abscess, yet in all cases there were found foci of suppuration, either large or small, in the tonsillar tissue. In two cases there was also evidence of peritonsillar abscesses. In all of these cases he found large numbers of streptococci and staphylococci, but more of the former where there were numerous foci of suppuration. He concludes from his observation that the infection of the follicles is probably secondary to that of the crypts. The germs of contagious and infectious diseases, which generally find lodgment in the throat before reaching other parts of the body, may enter the system through these portals in the tonsils, and not only set up inflammatory processes here, but may be carried on through the lymphatic system and develop a pneumonia, pleurisy, pyæmia, or septicæmia. Peritonsillar abscess, associated with measles, scarlet fever, typhoid fever, and influenza, is familiar to all, and need not be considered any further.

The symptoms of peritonsillar abscess are so well known that often a diagnosis can be made by the appearance of the patient or the sound of the voice when an attempt is made to speak. Difficult swallowing, with pain extending

to the ear, often described as a pricking pain, constant expectoration or drooling, œdema of the uvula, swelling and redness of the tonsil and soft palate, inability to open the mouth, and glandular swelling on the outside of the neck are sufficient to make a correct diagnosis. The early symptoms are chill, followed by fever, headache, and backache.

The treatment of peritonsillar abscess is essentially the same as that of abscesses in other parts of the body, and consists in an early evacuation of the pus. As soon as the disease passes from the inflammatory state to that of suppuration, it ceases to be medical, and becomes surgical. The surgeons tell us whenever we find pus to let it out; that when it is escaping with free drainage it will do no harm; it is, therefore, better treatment to open the abscess than it is to allow it to break. That it is the rule for a peritonsillar abscess to discharge and go on to resolution, all will admit, but that there have been some notable exceptions, all must as readily admit. Even if there was no danger at all in waiting for the abscess to break, much suffering can be spared by an early opening with the knife. If the physician is called late and can tell where the pus is located from the amount of swelling present, or can actually see the pus pointing, there can be no hesitancy as to the place to incise. It may be in the tonsil itself, in the anterior pillar, in the posterior pillar, or above the soft palate. The writer recalls one case seen this Spring where the pus was seen oozing out between the tonsil and anterior pillar when any movement of the jaw was made. An incision was made here, and a free escape of pus obtained. Three days later the woman reported at the dispensary, and an examination showed that the inflammation and swelling had entirely subsided. Two other cases seen recently were pointing directly above the lower wisdom tooth, and, of course, were incised at this point.

The old method of opening was through the tonsil, but of late years it has been the custom to open through the anterior faucial pillar, by which route it was considered the abscess cavity could be more readily reached. That it can

be readily reached in this way is true, but it is doubtful if it can be as thoroughly drained. Care must be taken in this operation not to wound the large vessels of the neck with the knife. F. C. Cobb has taken the measurements of a number of abscess cavities, and finds that there is an average depth of $1\frac{1}{8}$ inches from the anterior pillar.

Leland, in 1899, revived the old method by recommending that incision should be made through the tonsil with the sickle knife, cutting upward and outward in the direction of the supratonsillar fossa, and then exploring with the finger and rupturing the tissue lying between the tonsil and this fossa. He claims that, in cutting in this direction, he cuts in the way in which the pus is going; that the pus is more readily reached, and freer drainage from the bottom of the abscess is established. He also asserts that there is less danger of wounding the large vessels of the neck, but he admits that it is much more painful than the other operation, and often requires the administration of a small amount of ether.

In another case recently seen by me, an incision was made through the tissue above the anterior faucial pillar. A large quantity of pus immediately escaped, and much relief was experienced. Two days later the case was seen, and the patient still complained of pain and constant oozing of pus. A probe was passed through the opening into the supratonsillar fossa, which was found to extend as low down as the middle of the tonsil, and the point of the probe could be felt in this location. A free incision was then made through the tonsil, and pus immediately oozed out through this new opening. The abscess cavity was then thoroughly washed out with an antiseptic solution, and the case was watched for several days, but no further trouble was experienced. In this case better drainage certainly was obtained through the lower opening than through the upper opening first made.

The tendency to-day is, I think, to open through the tonsil between the pillars.

It may be of interest to briefly consider some of the

complications which may be present with this disease. Several cases are recorded where the pus has made its way into the posterior portion of the pharyngo-maxillary fossa, and then into the mediastinum, with fatal result. Bosworth believes that the most frequent fatal complication is by rupture of the abscess during sleep and escape of the pus into the air passages, producing suffocation. Leland reports a case of death during sleep which was probably caused in this way, but there was no autopsy. Chappell reports ten cases of severe hæmorrhage, the bleeding occurring some days after spontaneous evacuation. Eight of these cases terminated fatally, while two were saved only by ligating the common carotid artery. He also reports one case where the abscess pointed in the middle of the posterior pillar, where it was incised. Four days later the patient complained of pain in the throat, followed in a few minutes by a hæmorrhage of six ounces, which ceased on the application of tannic acid. Four hours later a second hæmorrhage occurred of about eight ounces, which was stopped by an astringent gargle. Five days later a third hæmorrhage occurred of eight ounces. A large incision was then made in the soft palate till the abscess cavity was reached. After thorough washing with peroxide of hydrogen the ascending pharyngeal artery was seen, but no ulceration of its walls could be detected. The cavity was packed with iodoform gauze. The packing was changed daily for ten days, when the wound had healed and no further hæmorrhage occurred.

Rigal, Didelot, and Kiemann each report a death from septic thrombosis, and M. R. Ward reports two cases of death from the same cause. In all of these cases there was a septic phlebitis of the bloodvessels of the neck, and in two of the cases metastatic abscesses of the lungs were found.

In conclusion, we may briefly consider if any method can be adopted whereby the recurrence of this painful disease can be prevented. In some cases a free opening into the supratonsillar fossa which is capable of maintaining a permanent drainage may prove sufficient. But a surer method, it seems to me, would be to remove the tonsil. Ordinary

tonsillotomy may hinder a recurrence, but it is not always infallible. Complete enucleation of the tonsil, by which all of the tonsillar tissue is dissected out either by a snare or by the scissors, affords the best means of preventing a recurrence.

867 Boylston Street.

DIAGRAMS FOR PRESBYOPIA AND PRISM UNITS.

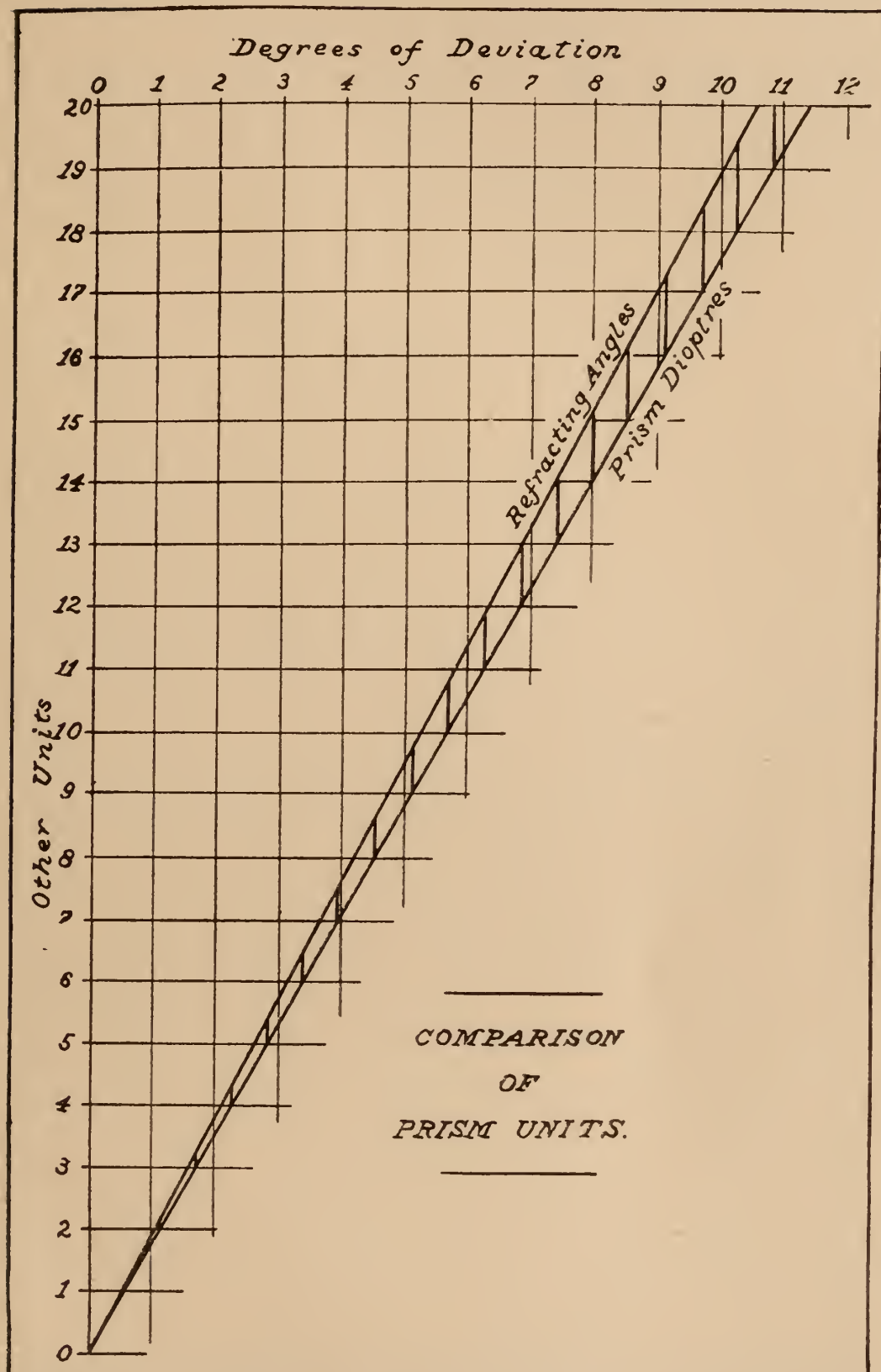
WALTER GRIBBEN,

Brooklyn, N. Y.

THE presbyopia diagram shown herewith, is based on a table for the same purpose given by Donders; but the information in the shape of a diagram is much more accessible, and appeals to the eye more readily than when in tabular form, especially where interpolation has to be performed, as is often the case.

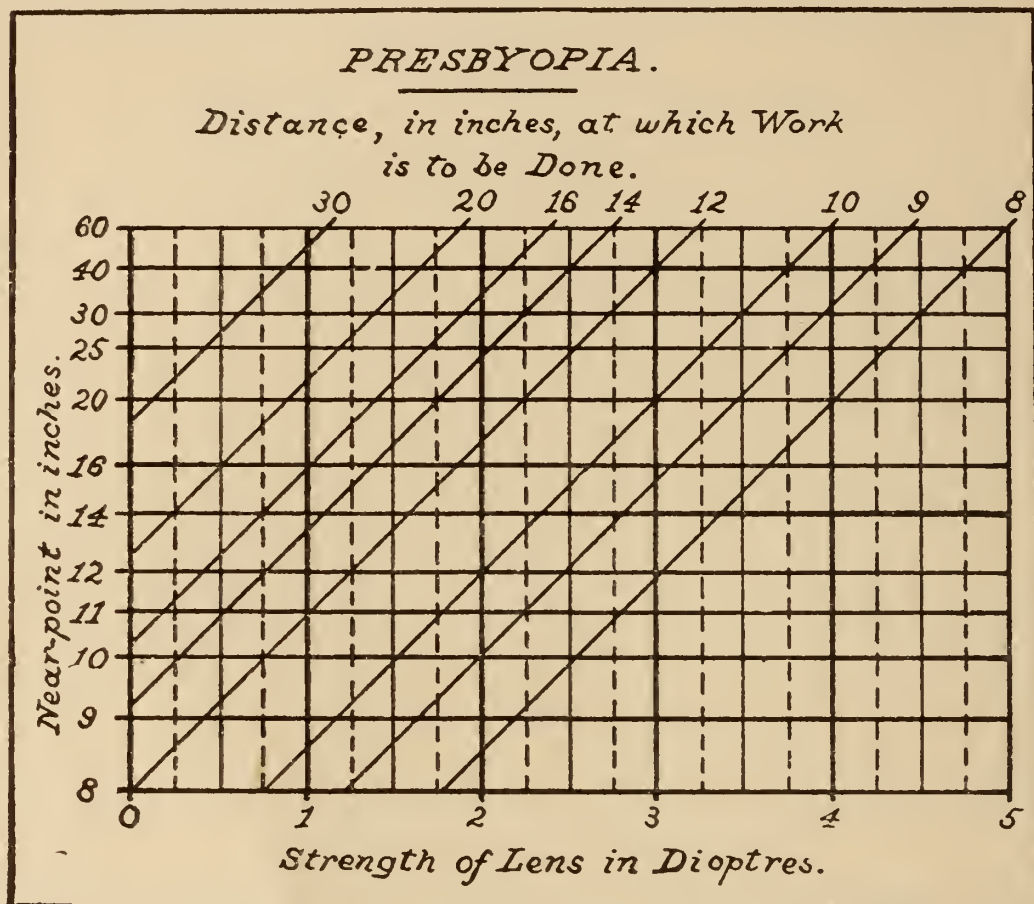
The two factors that determine what lens shall be used to correct the presbyopia, are the near point and the working distance.

The method of using the table is this: With the distance correction in place, the near point is determined. If this should be thirty inches, for instance, and work was to be done at fourteen inches, we would look for 30 at left of diagram, follow this line horizontally till it intersects the diagonal line marked 14, and then find what vertical line comes nearest to this point of intersection, which, in the case under consideration, is the line representing a 2.25 D. lens. This would be the lens to apply in addition to distance correction. Or if near point was eighteen inches and work was to be done at thirteen inches, we find on looking at the diagram that neither of these quantities has a line to represent it. The 18-inch near point line, if shown, would fall between the 16- and 20-inch lines, slightly nearer the latter; also the 13-inch working distance line would be about midway between the 12- and 14-inch lines, and the eye can locate the intersection of these two imaginary lines



near enough to see that it falls close to the 1.75 D. vertical line, which would be the presbyopic correction for this case.

Lines for each inch of near point were not inserted in the diagram in order to avoid confusion, as they would be very close together in the high numbers. The same applies to



the working distance lines. The vertical lines are inserted for each quarter diopter, the whole diopters being heavy lines, the halves light lines, while the quarters are dotted. Eighths may be estimated if desired.

It will be noticed that the vertical lines are at uniform distances apart, while the horizontal lines, if all the values were represented, would be very much closer together at the top than at the bottom. The reason of this is that if the distance of near point were expressed in dioptres, the horizontal lines would then be at uniform distances apart.

In fact, that was the way the diagram was originally laid

out, with the near point expressed in diopters, but the values were then translated into inches, and the inch lines only were entered. The near point dioptric scale was made finer than the lens strength scale in the ratio of three to four, which not only caused the working distance lines to be inclined at an angle of 45° , but also made the normal spacing between them exactly the same as the spacing between the corresponding near point inch lines, thus facilitating the mechanical work of constructing the diagram, without interfering with the readiness with which it can be used. Had the near point inch lines been equally spaced, the working distance lines would have been curved.

The other table is for translating the values of prisms from one kind of unit to another. For instance, if we had a 14 D. prism, and wished to know its refracting and deviating angles, we would find 14 at the left, follow the horizontal line along till it intersected the "prism diopter" line, which it does at the vertical line marked 8° deviation. This same vertical line intersects the "refracting angle" line a trifle above the horizontal line marked 15. Thus we know our 14 D. prism has a deviating angle of 8° and a refracting or physical angle of slightly more than 15° . Or if we wished to produce 4° of deviation, the diagram shows us that a 7 D. prism would accomplish this result, as the vertical line marked 4 intersects the "prism diopter" line quite close to the horizontal line marked 7.

This diagram was laid out for a refractive index of 1.52. If the index of refraction is greater than this it would cause the "refracting angle" line to be further away from the "prism diopter" line at its upper end, but would make no other change in the diagram.

IS NOT THE TERM "REVITALIZE" BETTER
THAN "ABSORB" FOR DESCRIBING THE VA-
RIOUS METHODS OF TREATMENT NOW
IN VOGUE FOR CLEARING LENTICULAR
OPACITIES?

SAYER HASBROUCK, M. D.,

Providence, R. I.

WE are almost daily asked to express our opinion on this subject and in speaking of it drift naturally into the common method of expression, but as scientific men should we continue to do so, if we are misstating matters? I have for a long time stated to my patients that it was not the object of such methods of treatment to promote absorption of the lens; to absorb anything means to suck it up, and in that way remove it. If we did this in the treatment of lenticular opacities we would by a slow method be attempting to remove the lens tissues, and our patient would in the end be left in exactly the same condition as if the lens had been removed by an operation. This is just what our patients do not wish. What they want, and what they ask us if we can do, is to restore the opaque lens tissue to its normal transparency and usefulness. To do this I believe it necessary to revitalize, not to absorb, the cell elements of the lens structure which, from a lack of proper nutrition, have lost their functional transparency and are no longer able to transmit rays of light to the retina for the proper construction of visual impressions. This being so, why is it not best to take advantage of such phraseology as will correctly express our meaning?

For this I offer the term *Revitalize* until some better expression is suggested, as this word to my mind fully expresses just what we are trying to do. To me the word absorption conveys about as clear an expression of this subject as the expression far-sightedness does of a hyperopic eye.

105 Broad St.

THE REMOVAL OF FOREIGN BODIES FROM THE EYE.*

PROF. O. HABB,

Zürich, Switzerland.

IN considering this subject we have not only to deal with the foreign body *per se*, but also with the possible infection; therefore there is no more regularity of procedure than in operations on cataract, trachoma, etc.

In practice two groups are distinguishable: those consisting of iron and those of other materials. Iron is the most common, then come stone, wood, etc., and the anterior part of the eye is the most frequent seat.

Members of the second group—non-iron—are much more difficult of removal. It is sometimes advisable to leave them in the eye rather than to make a large opening in the vitreous for their removal. Copper often remains innocuous. I consider the Doremus extraction forceps the best, but these are only useful when the object is discernible with the head mirror. With these I removed a copper splinter which had escaped ten previous attempts with other forceps. In another case the removal of copper was followed ten years later by detachment of the retina.

The X-ray is not practical for pieces of iron one millimeter or less in size. Localization is chiefly necessary when the small magnet is used. The right use of a magnet is to exert its power from a distance, accomplishing the removal without destroying the vitreous. The small magnet is useful only for the anterior chamber. Recently I have used the large magnet core for the anterior chamber.

Kniess used a large magnet for iron particles in the anterior

*Address before the Ophthalmic Section of the American Medical Association, June 11, 1902. Reported by F. Park Lewis, M. D.

part of the eye, but I was the first to employ the large magnet at a distance to remove particles from the deeper structures. The magnet should be as hard as possible. In America the large magnet has been generally adopted. [Dr. Haab then exhibited photographs describing the method of using the large magnet. He has added a foot controller to which he attaches great importance ; it enables him to close or open the circuit suddenly].

With the patient so placed that the magnet is opposite the center of the cornea, the foreign body must be drawn into the anterior chamber. In the majority of cases the lens has been injured. If this is not the case the foreign body is drawn forward quickly or slowly into the anterior chamber, whence it is removed through a small incision in the cornea. If the iris bulges the current must be shut off ; then the foreign body is to be drawn around from behind the iris and through the pupil. This demands skill and patience. If the body sticks behind the periphery of the iris, make a small incision through which it may be drawn ; the dialysis of the iris heals in a few days.

It is never advisable to draw the foreign body through the wound, it tears too much the vitreous or the iris. In the majority of cases the foreign body enters through the cornea. Of 165 cases, in 34 the splinter was lodged in the retina. If possible localize with the ophthalmoscope, patiently and carefully. I have often watched with the ophthalmoscope the slow detachment of a splinter from the retina. In obstinate cases help start it by gently turning the eye from right to left.

If the splinter is in the ciliary region first draw it backward before trying to get it into the anterior chamber. 86 per cent. of my attempts at removal were successful ; the large magnet failed in only 23 out of 134 cases. My failures were due to (1) foreign body too firmly embedded in the back part, (2) in ciliary region, (3) fibrous inflammation, and (4) an encysted case.

When the foreign body could be seen in the back nasal wall it was removed by passing a needle through the sclera under ophthalmoscopic observation.

A splinter long healed over had better not be interfered with ; the attempt at removal might excite new inflammation and thus endanger the other eye.

The large magnet at a distance is less dangerous than the introduction of the small magnet ; approach the eye slowly to the

magnet. It is not necessary to have three different-sized magnets; use a magnet of the greatest strength, the giant magnet is easily weakened. The small Haab magnet was used in only 13 of 141 successful cases.

Infection is not removed with the splinter. Of 165 cases treated, splinters were extracted from 141 eyes; a number were saved from enucleation; 39 eyes were removed; 34 were lost through suppurative inflammation; in 19 the eyeball was saved; 71 had good sight.

Ten years ago we began to introduce iodoform into the eyeball. I now introduce rods of iodoform and gelatin, even into the vitreous with success; it cannot do harm and may do good—but sometimes the infection is stronger than the remedy. These rods, which must be kept sterile, may be introduced through a small incision. Be sure that the rod does not slip out.

THE IMPORTANCE OF CORRECTING EYE-STRAIN.*

FRED. D. LEWIS, M. D.,

Buffalo, N. Y.

THIS subject has been considered so frequently in the last few years by men of the greatest prominence in their special line of work that it may seem presumptuous on my part to select to review the subject again. However, my experience has taught me that its importance is not yet as fully appreciated by the family physician as it should be. There are more ill effects following an eye-strain of any length of standing than would be believed, unless such conditions were presented daily to the specialist. Or, in other words, it is surprising how many cases of suffering that have been treated or endured for years disappear of themselves when the cause (when it is the cause) is removed—namely, eye-strain.

We all know that very many headaches are due to defective vision, but do we all know that indigestion, heart troubles, kidney affections, or, in fact, any trouble of any length of standing may be due to the same cause? When I speak of any troubles, I refer, of course, to old constitutional conditions, not contagious or infectious diseases. And yet even these, as I shall explain later, may to a considerable degree be the result of an eye-strain.

Let us for a few moments consider what eye-strain really is. It may be from several causes, either hyperopia, astigmia, or muscular unbalance. Now, when any of these conditions exist, nature makes an effort to correct them by the action

* Read to the American Institute of Homœopathy, 1902

of the ciliary muscle in the case of the first two, and by a spasmodic action of the weaker muscle in the last. The result of this unnatural muscular action to the patient is a loss of nerve energy. The sense of sight is more constantly in use than any other sense we possess. Now, with defective vision, even of a small degree, that can be easily overcome. The loss of nerve energy in the course of days, weeks, or years is simply enormous. This loss is, not infrequently, so much that other organs are deprived of a sufficient amount to conduct their functions. It is also a by no means uncommon occurrence to find a patient suffering from some functional derangement, where the eyes are the cause, without the slightest thought that the vision is anything but perfect. This may be accounted for by the fact that said patient has received as part of his inheritance an organ weaker than the eyes that has, in consequence, given warning of inability to perform its duties before the eyes have complained. Thus, with a congenitally weak stomach, indigestion, due to lack of nerve force, in consequence of waste through eye-strain, although the indigestion might be the only symptom of which the patient complains, would disappear on correction of the eyes. Congenitally weak kidneys, as I saw in a very marked case, resulted in rheumatism, while the patient was unaware of any eye trouble. This case had 20° of hyperphoria, the correction of which resulted in the gradual abatement of the rheumatism.

If individual organs are so profoundly affected from this cause, is it at all unreasonable to suppose that, when all organs are comparatively strong, the whole system may be so depleted that the subject will have the least resistive power to repel any contagious or infectious disease that may happen his way?

Again, if the child is attempting to overcome an eye-strain during the period when all efforts are bent toward tissue building, and this age is when the child is attending school and using the eyes most constantly, can we not justly draw the conclusion that the bone and muscle building will be hampered, and the child develop into an imper-

fect, or, I should say, under-sized specimen of humanity? Now, as nurserymen select the smallest seeds to produce dwarfs of any given tree, is it too much to suppose that this under-development may not be handed down through generations of unborn children? This whole argument leads finally to the question I wish to propose: Do we do justice to our patient, or have we made a complete examination, when we do not know exactly the condition of the eyes? I feel satisfied that in very many cases where I have corrected focal or muscular errors of the eyes I have saved patients many dollars in doctors' bills that would have resulted from their systems being in receptive condition for diseases, that, with the saving of the nerve force, they came in contact with and repelled.

I think it wise for everyone to have a complete and thorough examination of their bodies at regular stated periods, that disease may be discovered and fought in its earliest stages. Such is done in high-bred cattle, the tuberculin test being tried at regular intervals to detect consumption, and I think our patients deserve at least as conscientious care as is given to stock. This examination I consider incomplete without testing the eyes. It is not at all an uncommon thing to have patients referred to me by their physicians, who insist upon it, to tell me that they are not aware from any trouble in them that they have eyes; and yet on examination to find quite enough there to account for all their suffering. In olden times people never thought of consulting the dentist until there was evident trouble with the teeth, but to-day most people have learned to have the teeth examined regularly, to anticipate trouble. In my opinion the eyes are of just as much importance as the teeth, and it should not be necessary for them to cry out for help before an oculist is seen.

188 Franklin Street.

A CASE OF INTUBATION OF THE LARYNX.*

FRANCIS B. KELLOGG, M. D.,

Los Angeles, Cal.

IN a paper upon "The Place of the Specialist in Pediatrics," read before the Society at its last meeting, the writer made use of the following language: "There is another set of cases in which I believe that the services of the specialist should be utilized more frequently than they are. I refer to laryngeal diphtheria. Since the discovery of antitoxin cases requiring intubation have been less frequent, while the same discovery accounts for the fact that the percentage of recoveries in such cases has been markedly raised. Early use of antitoxin in all cases, and early resort to intubation where there is laryngeal obstruction, are, in my opinion, two rules which should be ever observed. If my own child were the patient, this would be what I would insist upon." This quotation represents the writer's position upon the subject of antitoxin, as well as in the matter of intubation. The cases for intubation invariably come first under the observation of the general practitioner. It is, therefore, of importance that the latter should appreciate the simplicity and efficacy of the measure in these cases, to the end that the patient may be given the benefit of its comfort and aid. I cannot resist the conviction that the physician failing to do this is gravely culpable. Even if the effort to intubate should, for some reason or other, prove unsuccessful, there is nothing lost in making the attempt.

Without further preliminary discussion, I will proceed to

* Read before the California State Homœopathic Medical Society, May 15, 1902.

the case under consideration. One evening during the month of February I received a telephone message from a Los Angeles physician, asking me to hold myself in readiness to perform tracheotomy on a child suffering with membranous croup, with marked stenosis of the larynx. My suggestion of intubation, instead of tracheotomy, was favorably received, and I was asked to see the child. I found a well-developed boy of two and a half years, and was given the following history: Some weeks before, while located in an outlying mining town, the parents had lost a seven-year-old boy after two or three days' illness with membranous croup. They were, therefore, in a state of mind to appreciate the seriousness of the situation when their baby began to manifest the initial symptoms of the same dread disease. The physician who was summoned treated the case with internal medication for twenty-four hours, but requested the counsel of a specialist when he saw that it was rapidly getting worse. Thus it was that I was enabled to see the case at a comparatively early stage. Examination disclosed diphtheritic patches on both tonsils, a rapid pulse (120), and a temperature of 102°. The respiration at this time was difficult and wheezing in character, but had not arrived at the sawing stage. The color of the skin was good, there being no cyanosis, but there was marked depression of the supra-sternal and supra-clavicular spaces upon inspiration. The fatality of the previous case, and the certainty that the infection must have originated therefrom, together with the presence of diphtheritic membrane in the throat, made the diagnosis of diphtheritic croup as certain as possible. The diagnosis was confirmed when a culture taken from the throat disclosed the Klebs-Loeffler bacillus in large numbers. Evidently the case was not as yet *in extremis*, but, judging from the experience of the brother, it bade fair to become so. Upon my advice the child was given an injection of 1500 units of antitoxin. This was injected into the loose tissue of the side just above the crest of the ilium. One hour later the intubation tube was inserted in the larynx. This was accomplished without serious difficulty.

The child was wrapped firmly in a blanket, so that the arms were pinioned to the side, and held in the arms of the physician, with the head reclining against his shoulder. The head was then firmly held from behind by the father. Standing in front of the trio, the mouth gag was inserted by the operator and the jaws widely opened. The index finger of the left hand was then introduced, until, gliding over the epiglottis, it rested upon the top of the larynx. The intubation tube on the introducer was passed into the throat, and, guided by the index finger, already there, to the top of the larynx. By raising the handle of the introducer at this point, the tube was given a forward direction, which caused it to slip into the larynx without difficulty. The first two attempts were unsuccessful, the tube passing, as it has a tendency to do, into the esophagus. This was demonstrated by the fact that during the introduction there was no stoppage of respiration, and also by the rapid shortening of the string attached to the tube after the withdrawal of the introducer, which showed that the latter was passing down into the stomach. Upon the third attempt the tube was given more of a forward inclination, and it was marked at once that the respiration was stopped. Upon withdrawal of the introducer in this instance there was a loose, hollow rattling of mucus, followed by a full inspiration in quite marked contrast to the wheezy, laborious efforts preceding the introduction of the tube.

At this point I wish to emphasize the immediate effects of the introduction of the tube. There is a natural aversion, especially on the part of parents, and sometimes upon the part of physicians, toward anything in the nature of an operation upon a suffering child, and doubtless many lives have been sacrificed to this sentiment. There is as much reason in it, under the circumstances, as there would be in a feeling of hesitation about pushing a plank to a drowning man. In the present instance the little patient seemed to realize that an effort was being made to give him breath, and he opened his mouth of his own free will every time that I approached him with the tube. Indeed, his efforts

to co-operate with me in my endeavor to afford him relief were pathetic, as well as materially helpful. As soon as the tube was in the larynx and oxygen was being freely furnished, the child sank into a peaceful sleep. The tube not only brought oxygen to the starving tissues, but it brought rest to the little body, which was rapidly becoming exhausted through the struggle for life. The relief to the child was shared by the parents.

Impressed by the knowledge that getting the tube out was a matter of considerable difficulty, I yielded to the temptation to leave the string attached to it; to my regret. I pinned his arms tightly in the blanket, and left him with one of the family to sit beside him and watch him, to see that nothing touched the string; but I had only been home a few minutes when I was informed by telephone that the child had in some way, through the blanket, caught the string and pulled out the tube. It was evident that, while the smooth tube was tolerated by the larynx without discomfort, the string dragging over the epiglottis and base of the tongue caused considerable irritation, which led the child to try to remove it. I immediately returned, and in a very few minutes had the tube again in the larynx. This time I removed the string.

The next morning early I was telephoned for and informed that the child had coughed up the tube, and was again laboring for breath. Upon arriving at the house, I learned that toward morning the tube had apparently become clogged with mucus, and that the efforts to cough this up had dislodged the tube. The difficulty of respiration at this point was even greater than when the tube was first inserted. This aggravation was partly due to a loosening of the diphtheritic deposit. It was considered best to inject an additional 1500 units of antitoxin, which was done. The tube was then reintroduced, and, to favor the drainage of mucus from the larynx, the child was placed on an inclined plane, with the head considerably lower than the body. In this position the trouble from the collection of the mucus in the tube ceased.

It struck me at the time that this matter of the head-down position after intubation was one of great importance, and for the following reasons: 1st. It favors the drainage of mucus from the trachea into the mouth, and, by preventing its accumulation, removes the inclination to cough. It is evident that, with the head up, it would be easy to cough mucus into the lower opening of the tube, but it would be extremely difficult to force it through the same, and, if present in any quantity, as it is almost certain to be, the coughing up of the tube must follow almost of necessity. On the other hand, with the head down, the polished lumen of the tube must be most favorable to the flowing out of the mucus under the influence of gravity. 2d. It favors the automatic release and expulsion of the tube at the proper time, thus, in a certain proportion of cases, removing the necessity for extracting, which is the most difficult step in connection with intubation. The tube is held in the trachea by a bulb at its middle point. The mucous membrane, which is greatly infiltrated and swollen, as evidenced by the stenosis, fills in the inequalities of the tube above and below, preventing it from slipping out when once placed. As soon as the swelling subsides sufficiently to relax the grasp of the membrane upon the sides of the tube, the latter, when the head is lower than the neck, inclines to slip forward and downward into the mouth. 3d. It enables the patient to drink milk from a cup without suffering any inconvenience from the presence of the tube. There is a tendency in some cases for the tube to interfere with the act of deglutition, the liquid swallowed passing into the tube and giving rise to paroxysms of coughing. By placing the patient with the head lower than the rest of the body, so that in drinking the liquid is controlled entirely by muscular action, as in the case of the horse, all difficulty is avoided. If the act of swallowing is rendered imperfect by the presence of the tube, the fluid runs into the mouth, instead of into the larynx.

After placing the child in this position, respiration was unimpeded and uninterrupted. Early the following morn-

ing I was informed over the telephone that the tube had slipped out ; that it had been found on the floor, and had evidently been there some little time without having been noticed. The child was breathing easily, and from that time made an uninterrupted recovery.

THE CONNECTION OF THE ISOLATED RESPIRATORY FIBERS OF THE RECURRENT WITH THE SYMPATHETIC AND CARDIAC NERVES.*

ADOLPH ÓNODI, M. D.,

Professor of Rhino-laryngology, University of Buda-Pesth.

THE connections of the laryngeal nerves with the sympathetic and the nervi cardiaci have been known for a long time, but recent observations and my investigations have shown an extraordinarily intimate connection, which doubtless must have special significance. The connection of the superior laryngeal nerve with the upper cervical ganglion of the sympathetic and with the rami cardiaci superiores, which arise from the latter, is known, as is also the connection of the superior laryngeal nerve with the lower cervical ganglion of the sympathetic; the connection of the external branch of the superior laryngeal being much closer with the upper cervical ganglion of the sympathetic and the superior cardiac nerve.

The external branch of the upper laryngeal nerve sends off a direct cardiac branch or connections to the upper cervical ganglion of the sympathetic and to the upper cardiac nerve. These anatomical conditions form in man an exact analogue to the depressor nerve found in animals. In regard to the inferior laryngeal, we know its connections with the upper cervical ganglion of the sympathetic and with the superior cardiac nerve. Of great significance is the observation of Lenhossék, according to which the inferior laryngeal nerve arises from a ganglion, whilst the ganglion stands in connection with the pneumogastric by means of a

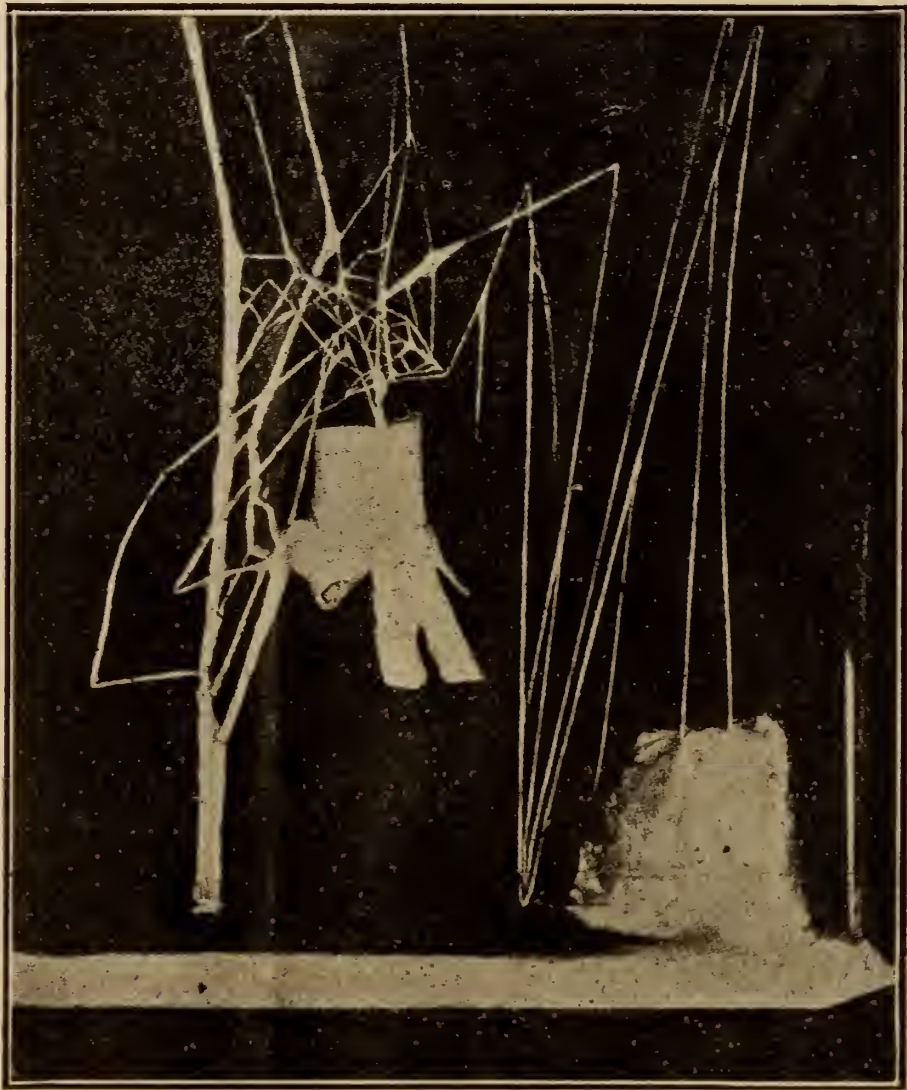
* Reprinted from the *Brit. Med. Jour.* of August 30, 1902.

thin root. The lower laryngeal is connected with the lower cervical ganglion of the sympathetic, and further with the cardiac branches, which take their origin from the middle and lower cervical sympathetic.



I have succeeded in giving in the horse the anatomical proof that, according to the double function of respiration and phonation of the larynx, the respiratory and phonatory nerve bundles run separately in the trunk of the inferior laryngeal nerve and in the trunk of the pneumogastric. I have demonstrated this for a length of 88 cm. Whilst the phonatory nerve bundle could easily be isolated, and showed only one connection each with the ansa Vieussensii and

with the cardiac branch, it was difficult to isolate the respiratory nerve bundle, for it was very intimately connected by means of eight branches with the sympathetic and the cardiac branches. The photograph shows this remarkably intimate connection.



It is known that in the trunks of the sympathetic, beside the vasomotor and trophic there are cerebro-spinal, sensitive, and motor fibers. My investigations have shown that the cerebro-spinal nerve fibers of the rami communicantes run in the trunk of the sympathetic according to a well-defined system. In the upper part of the thorax, and in the neck, the larger part of the cerebro-spinal fibers of the sympathetic run upward, and only a smaller part downward,

whilst in the rest of the thorax and in the abdomen just the reverse is the case. The sympathetic constitutes the morphological basis in the known connections for the course of the fibers and their intercommunication, as they are of different origin and different destination. Physiology has until now shown the presence of the depressor fibers and the cardiac branches originating from the upper laryngeal nerve, and my experiments have shown that in the dog the irritation of the sympathetic trunk between the lower cervical and first thoracic ganglion, as also of the communicating branches of the brachial plexus, will produce a contraction of the vocal cords of the same side. Beyond these observations the morphological facts mentioned have received no pathological or physiological explanation. I may, in particular, draw attention to the intimate connection before mentioned, which exists between the isolated respiratory nerve fibers of the lower laryngeal nerve, and the sympathetic and the cardiac branches. The morphological foundation is laid in the before-mentioned single facts, showing an exchange of nerve fibers of different origin and destination, but the isolation of these fibers, and the investigations of their destinations, still forms a subject the difficult solution of which is reserved for future physiological and pathological inquiry.

SYMPOSIUM.

What Are Your Favorite Medicines (Internal) for (1) Acute Catarrhal Otitis Media? For (2) Acute Tonsillitis? And Your Indications for Them?

IRVING TOWNSEND (New York): The remedies I prescribe for otitis media catarrhalis acuta are belladonna, ferrum phos., hepar sulph., merc. dulcis, or iodide. On general indications, tonsillitis, unless due to systemic causes or local infection, usually responds to the same remedies.

GEORGE B. RICE (Boston): Acute tonsillitis I look upon as either a manifestation of uricacidæmia or because of localized foci of sepsis resulting from the presence of diseased and dilated crypts and follicles. In the first instance my remedies are guaiacum (in two-grain doses every hour), phytolacca, merc. bin., belladonna, and gelsemium, according to their several well-known indications. In the other type, I try to clear out every follicle and crypt with a small bit of cotton dipped in fifty per cent. hydrogen dioxide, to be followed by from ten to twenty per cent. protargol, and the use of antiseptic gargles. Internally I give usually belladonna or gelsemium.

H. W. HOYT (Rochester): My favorites for acute tonsillitis are belladonna 3x, when the throat is dry, raw, and feverish; merc. biniodide 3x, when there is dull aching with swelling of tonsil and white spots; guaiacum tincture, if there is sticking pain and premonition of quinsy.

FRED D. LEWIS (Buffalo): I think more can be done to relieve the patient with local measures than with internal medication in acute catarrhal otitis media. I have no favorites; the selection must be based on symptoms in individual cases. For acute tonsillitis I first think of the mercuries, the protiodide, if commencing on right side, and the biniodide, if on the left.

M. A. BARNDT (Milwaukee): I have no special internal medicines for acute otitis media or acute tonsilitis. In prescribing for these diseases I give as near as possible the indicated remedy according to the totality of symptoms. I have found for acute tonsilitis baryta carb. an excellent remedy, which should be given at the very outset of the disease; the chief indication for this is the sharp, stinging, and pricking sensation in the throat.

HERMANN KNAPP (New York): I have no favorite internal medicine for self-limiting diseases, as acute otitis media, or acute tonsilitis. I enjoin rest in bed from the very beginning, and administer such sustaining, quieting, and derivative medicines, as the constitution of the patient and the nature of the disease may call for.

EDWARD FRIDENBERG (New York): (1)—No favorites; Dover's powder and quinine are occasionally of use at beginning of attack. Paracentesis and pneumatic suction to empty the middle ear are most important. (2)—Tr. guiac and tr. aconite are useful to relieve symptoms. Local treatment is most promising. Clean out the crypts repeatedly and frequently when there is retention, with probe; bichloride 1:500, or iodine and glycerine; frequent hot gargles in the diffuse variety; a wet pack about throat at night.

JOHN M. INGERSOLL (Cleveland): I do not give medicines internally in uncomplicated cases of acute catarrhal otitis media or acute tonsilitis.

GEORGE STRAWBRIDGE (Philadelphia): A dose of calomel and free purgation for both diseases.

W. PEYN PORCHER (Charleston, S. C.): My treatment is almost entirely local, except for some mild mercurial or other cathartic. The indications are pain and swelling.

CHARLES W. KOLLOCK (Charleston, S. C.): Except in cases of syphilis, and for general tonic treatment, I have never found that internal medication had much effect on acute catarrhal otitis media. Acute tonsilitis due to the rheumatism is, of course, best treated by the administration of the salicylates internally, but when caused by cold or exposure I know of no internal remedy that is a specific.

S. H. LUTZ (Brooklyn): No internal medicine for o. m. c. a. For tonsilitis, sodii salicyl.

L. B. GRADDY (Nashville): (1)—I have none; none do any good. (2)—Salicylate of sodium, presupposing previous attention to bowels—usually by calomel. Indications—high fever, general pain simulating rheumatism.

GEORGE C. STOUT (Philadelphia): (1)—In acute catarrhal otitis media I place very little reliance on *internal* medicines and avoid them all as far as the *general* condition will permit. (2)—In acute tonsilitis as well I rely *more* on the local medication, but here it is my custom to use the salicylates or co. tr. of guiac as adjuvants, also the free use of non-carbonated waters and small doses of calomel.

A. A. CANNADAY (Roanoke, Va.): For each, sodii salicyl.

LINN EMERSON (Orange, N. J.): In both, general depletion by calomel and salines. Rest. I know of no specific treatment (other than local) for acute catarrhal otitis media. In tonsilitis salicylates often appear to do good even when there is no rheumatic history.

GEORGE E. MOLSBERY: In most cases salol for acute catarrhal otitis media, and the salicylates for acute tonsilitis.

F. M. HIGGINS (Cortland, N. Y.): I depend almost entirely upon salicylate of soda in acute tonsilitis. The disease is very nearly related to acute rheumatism, and the treatment should be much the same; I use Merrell's salicylate made from the oil of wintergreen, and find no trouble in giving large doses. It seems to me that the treatment does good.

WILLIAM H. DUDLEY (Easton, Pa.): I have no favorite medicines for either of these conditions—though for acute tonsilitis to relieve a lithæmic state, upon which condition this disease seems sometimes to depend, I use remedies addressed for that condition.

D. A. KUYK (Richmond, Va.): In all acute inflammations of the ear, tonsils or the throat the first indication is to re-establish the disordered equilibrium of the circulation and of the nervous system. By far the most frequent cause of these inflammations

is the contraction of colds by individuals already the subjects of some form of chronic catarrhal inflammation of the nasal, throat, or aural mucous membranes. Usually, too, we find these people have more or less tendency to digestive or hepatic disturbances, a lymphatic temperament, and are of irregular habits. Begin with small, frequently repeated, hepatic stimulating doses of calomel (ten $\frac{1}{10}$ gr. doses every ten minutes), followed with a seidlitz powder. Then break up the cold with eliminant or nerve-stimulant treatment.

PRACTICAL HINTS.

Tumors of the nasal septum of a wide base, uneven ulcerated surface with a tendency to bleed, are suspicious and should be removed with the least possible delay. Nardi (*Arch. Ital. di Lar.*, April, 1902) holds that nasal sarcoma is not infrequent [in Italy?] and is more often encountered than epithelioma and carcinoma of the septum. Angio-sarcoma is a rare nasal tumor.

Epiphora, while wearing eyeglasses, may be due to one or more of the puncta being pulled away from the globe.

Examine microscopically without staining, and another drop with picro-carmin, the sediment of washing middle-ear discharge (in cases of a year's standing). Shreds of epidermis persisting for weeks or months warn us of cholesteatoma. The continuous presence of bone dust is of great importance. Cholesterin crystals are of no special import.

To prevent recurrence of acquired atresia of the external auditory meatus, Schwidop widened the canal by chiseling off the posterior bony wall; after the flap healed the patient wore a rubber prosthetic device made by a dentist.

In the mastoid operation the fibro-cartilaginous tube, if dissected out from the bony canal, will rupture posteriorly close to the level of the drumhead.—DENCH.

A previously healthy sinus opened during the mastoid operation may develop sinus thrombosis. Lederman knows of three such cases.

While curetting post-nasal adenoids keep the right forefinger constantly alongside of and in touch with the curette as it is swept backward and forward across the vault of the pharynx. You thus know just what you have to do, are doing, and have done.—JOHN C. LESTER.

In the examination of the larynx it is well to introduce the laryngoscopic mirror horizontally and examine the base of the tongue and the glosso-epiglottic fossa. In this way many cases of enlargement or irritation of the lingual tonsil will be noticed, which would otherwise be overlooked. Enlargement of the lingual tonsil is one of the frequently overlooked causes of cough.—THOMAS M. STEWART.

Resorcin, 25 to 50 per cent. solution in alcohol, is an excellent local application to the pharynx and posterior nares in throat complications of scarlet fever. Applied once a day, it reduces the swollen tissue, allowing nasal breathing.—*Ibid.*

Asthma.—Kali Carbonicum 6x cured a case of asthma in a gentleman 59 years old. He was inclined to rheumatism and cough, with expectoration of tenacious ropy mucus. Until relieved by this remedy he had been unable to lie down for many weeks.—*Ibid.*

Ophthalmia neonatorum responds nicely to a 25 per cent. solution of argyrol, instilled freely every three or four hours to all parts of the conjunctival sac. It is not caustic, causing little or, in fact, no pain.

Severe gonorrhœal ophthalmia may be treated with a 50 per cent. solution of argyrol, every two or three hours. Argyrol contains about half as much silver as does silver nitrate.

The patient may be trusted to instil 10 per cent. argyrol, three or four times a day at home, for ordinary catarrhal conjunctivitis.

Œdema of the uvula calls for tannate of glycerin (1 to 8 or 1 to 10) locally. Multi-puncture should be tried before amputation. Apis mellifica, or apium virus, is the best remedy; especially if the uvula looks œdematous, pale, puffy, and if there be stinging pains, no thirst, drowsiness, swelling, with smarting soreness in the pharynx, capsicum will afford relief. If the throat

feel dry, belladonna may be the remedy. A gargle of equal parts of hot milk, water, and alcohol has proved beneficial.

For relaxed uvula give crocus.

Stricture of the Eustachian tube may be benefited by bougieing. Obstructions have been found at the tympanic orifice when the remainder of the tube showed no sign of stricture and when the auscultation sounds were normal; a black bougie should then be introduced into the tympanum, if the drumhead is not much retracted and has any transparency.—GEORGE W. McDOWELL.

Corneal haziness may be in the epithelium or the substantia propria. The presence of small bullæ may help us decide; they appear black if the cornea is transparent.

In treating myopia never fail to regulate the relation between convergence and accommodation. Prisms may be necessary. The distance between the two optic foramina and their depth from the surface are remarkably constant in all skulls, even of the most diverse type. The inner (nasal) part of the orbit is regularly symmetrical. The distance between the internal walls of the orbits is estimated from the interpupillary distance, because the distance between the globe and the long inner wall may be regarded as constant, and also the semi-diameter of the globe. In this way it is easy to calculate from the interpupillary distance the angle made by the axes of the muscular cones. This angle Liebreich calls the angle B. Upon fixing a near point the angle at which the lines of vision cross varies according to this angle. Insufficiency of the internal recti is "usually" [?] the consequence of a large angle B.—LIEBREICH in November *Annales d'Oculistiques*.

Instillation, p. r. n., of 1 per cent. dionine relieves the intra-ocular pain of iritis.

Eustachian catheterization should always be preceded by a rhinoscopic examination; it is facilitated by first applying a weak solution of cocain and some bland oil. If the obstruction be an oblique ascending ridge on the septum, introduce the catheter with its beak beneath the ridge and pointing toward the septum; when it has been pushed as far back as possible rotate the tip downward and outward beneath the inferior turbinal, then

upward, and finally upward and outward into the vault of the inferior meatus. "To accomplish the latter part of this procedure it is sometimes necessary to withdraw the catheter a short distance, after which it is pushed steadily backward until it enters the naso-pharynx."—DUNDAS GRANT.

For Eustachian catheterization forcibly raise the tip of the nose.

Only 28 cases of hemorrhage into the labyrinth are recorded: Sudden and complete (incurable) deafness, tinnitus, headache and dizziness; tests exclude disease of external and middle ear.

Massaging the ossicles with Lucae's probe is less painful, there is no excoriation or irritation, it can be prolonged and the pressure increased to 60 or 100 grams, if the probe is tipped with paraffin (dipped into it while melted).

Orthoform lozenges, 1-8 to 1 grain, ten minutes before meals, in cases of tuberculous laryngitis reduce to a minimum the discomfort attendant upon swallowing.—S. SOLIS COHEN.

Of 200 cases of goiter associated with naso-pharyngeal lesions (all had been preceded by naso-pharyngeal congestion) Du Fournier cured 52 with naso-pharyngeal treatment: 10 per cent. menthol spray t. i. d. and a 50 per cent. chromic-acid solution (caustic) for redundant tissue; 133 fibrous or cystic cases of long standing were considerably reduced; in 24 cases improvement was very slight.

Open acute retropharyngeal abscess of infants behind the sterno-mastoid (Hilton's method). Cut behind and parallel to that muscle, the center of the incision as near as possible level with the center of the swelling. Be careful not to wound the spinal accessory nerve; use a dry dissector and forceps after exposing the muscle until the transverse processes and anterior surface of the bodies of the cervical vertebræ are reached. Keep well back against the vertebral column, in order to avoid injuring the internal jugular vein and cervical sympathetic nerves.

If the diameter of the cornea is smaller than the average in relation to the size of the eyeball, use no mydriatic, if possible, lest an attack of glaucoma be precipitated. The mydriatic least liable to precipitate an attack is scopolamin hydrobromate in 1/4 of 1 per cent. solution—in children, 0.1 per cent.

SOCIETIES.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL SOCIETY; Washington, D. C., June 2, 3, and 4, 1902. (Concluded.)

The Constitutional Manifestations due to Infectious Processes in the Adenoid Structure of Children, by D. Braden Kyle, of Philadelphia.

This gland structure is known to be particularly susceptible to inflammation. When this occurs there arise in children high fever and other constitutional manifestations. With the slightest infection of this gland the constitutional symptoms are entirely out of proportion to the local changes. After removal of the adenoid structure there is very little constitutional disturbance, even though slight local infection should occur. Children having repeated attacks of fever for which no very distinct cause is found should be examined, as it would usually be found that adenoid hypertrophy was present. After recovery from an attack, the adenoid structure should be removed by curetting, as this prevents the frequent recurrence of these febrile attacks, and often makes the child less susceptible to the acute infectious diseases.

C. R. HOLMES has frequently met with these cases; they often suffer also from tubal catarrh. Sometimes the quantity of adenoid tissue was so small that operation had not seemed necessary, yet on the removal of this small mass of tissue the tubal disorder had also disappeared.

ROBERT LEVY said that, with the exception of West, he did not know of anyone who had directed attention to this important matter. A case was mentioned, occurring in his own experience, in which, with only a moderate adenoid hypertrophy, a fever of considerable duration was quickly controlled by washing out the nose, and a cure effected by removal of this adenoid tissue.

D. J. G. WISHART: The infoldings of this gland are so deep that the absorbing surface is very great. The subject is worthy of considerable attention.

J. A. STUCKY, Lexington, Ky., said that until a year or two ago he had been inclined to look upon the cases described in the paper as being dependent upon irritation of the alimentary canal, rather than of trouble in the nasopharynx. Very frequently the patient was relieved by a mercurial purge, but he had met more recently with a number of recurrent cases in whom the removal of a small mass of adenoid hypertrophy had effectually prevented further attacks.

L. A. COFFIN, New York: A child thought to be suffering from malaria was not relieved by the usual anti-malarial remedies; the nasopharynx was examined and pus discovered, coming apparently from the ethmoidal region. Adenoids had been previously removed. He was inclined to think that retention of pus at various points explained these cases.

DUNBAR ROY insisted upon the use of the post-nasal mirror, rather than the finger, in the examination of the nasopharynx. In one case the nasopharynx was occluded by a whitish membrane, causing great obstruction to breathing, but associated with no rise of temperature; two cultures for the Klebs-Loeffler bacillus were negative.

C. G. COAKLEY, New York, opined that inspection with the mirror often gave a very faulty idea of the amount of lymphoid tissue present when the latter was situated low down.

H. W. LOEB, St. Louis, was opposed to the removal of adenoids unless they occluded the tube or interfered with nasal respiration. He had had under observation a child with attacks of otitis media, recurring at intervals of a few weeks. Adenoids were small, but since removal no more attacks occurred.

C. E. MUNGER, Waterbury, Conn., had been called to see a case of diphtheria because of the great difficulty in breathing. He had removed at once a very large mass of necrosed adenoids, with rapid amelioration of the symptoms. This was the only time that he had operated during an attack of diphtheria.

DR. KYLE, in closing, said that he often made an examination for adenoids with a nasal speculum and a small electric lamp in the mouth. Only about once in one hundred and fifty times could a satisfactory examination be made in a child by means of

the rhinoscopic mirror. He often made use of the finger, and could determine adenoid hypertrophy with it when this was impossible by either of the other methods.

Report of a Case of Rapid Necrosis of the Temporal Bone Following Scarlet Fever, by Dr. Francis R. Packard, Philadelphia.

The subject of the report was a child who had been in good health and had no disease of the ear prior to an attack of diphtheria, followed by scarlet fever. Examination then showed a large sequestrum of bone plugging the external auditory canal. Streptococci and staphylococci were found in both ears, though in only one was there any extensive necrosis.

A Case of Fibro-Papilloma of the Larynx, with Unusual Movements, H. W. Loeb, St. Louis.

A woman, aged thirty-eight years, first had an attack of suffocation and dyspnœa, coming on during the night. Her voice was jerky, but there was nothing about the breathing to indicate laryngeal obstruction. Examination of the larynx showed apparently a tumor on the posterior wall of the infraglottic portion of the larynx and trachea. As expiration began the tumor appeared, swung around and passed into the supraglottic portion; then a second tumor appeared and surmounted the first tumor, almost completely hiding the glottis from view. During phonation, as a rule, only the first tumor succeeded in getting above the glottis. Three tumors were first removed by the forceps, and a fourth one at a later sitting. It was evident that the tumors had sprung from the inferior surface of the right vocal band, and that their mobility was due to the length of the pedicle.

GEORGE L. RICHARDS said if one-quarter of a grain of morphine were given about half an hour before the operation it would greatly aid the operator, as the natural reflexes would be much less marked and the local anæsthesia intensified.

Spasmodic Torticollis Following Adenotomy, John M. Ingersoll, Cleveland, O.

Spasmodic torticollis following any operation was very rare. He had only found the record of one case occurring after adenotomy, and that by Dr. J. F. McKernon. His own case occurred

in a well-nourished boy. The adenoid tissue was removed under cocain anæsthesia with a Gottstein curette. Two days later the boy returned with a typical torticollis. Three hours after the operation the boy had begun to complain of pain in the throat, and the face turned to the left. Examination showed no apparent injury to the surrounding structures. The disorder was looked upon as a neurosis, and he was treated by suggestion and massage. The torticollis was easily overcome, and did not recur. The speaker was of the opinion that recovery would have taken place, though perhaps more slowly, without any treatment. Two cases of torticollis had been cured by Dr. A. J. Gillette by adenotomy.

THOMAS H. HALSTED, Syracuse, said that he had met with an exactly similar case, in which the torticollis had entirely disappeared after nine days without any treatment.

WILLIAM R. LINCOLN, Cleveland, O., recalled a case, occurring in a young girl, upon which he had operated for adenoids. The next day the muscles of the soft palate were found to be alternately relaxing and contracting, and inquiry elicited the fact that the child had suffered from chorea some time previously.

Influenza as a Causative Factor in Inflammatory Diseases of the Respiratory Tract, by W. B. Shields, St. Louis.

In his experience the sinuses most frequently involved were the frontal and ethmoidal, and the affection was sometimes associated with impairment of memory and lethargy. All cases of frontal sinusitis recover without operative interference, unless there is pre-existing polypoid hypertrophy or inflammation of the sinuses. The sphenoidal sinus was often affected, but recovery was often spontaneous. The worst cases were those in which the ethmoidal cells were affected. The laryngitis of influenza was similar to that found in ordinary colds. The most distressing and dangerous cases were those in which influenza attacks the lungs, and this was particularly so in persons showing arteriosclerosis or chronic disease of the lungs. The tendency to tuberculous infection after influenza was well marked.

J. A. STUCKY said that he had met with very few cases of influenza which had affected the larynx or the lower portions of the respiratory tract. He had noticed that violent frontal and occipital headache were out of all proportion to the constitu-

tional disturbance. The nose would show, perhaps, only a slight swelling of the turbinate, and the temperature of the body was apt to be subnormal in the morning and rise to 100 or 101 F. later in the day. Small hæmorrhagic spots were frequently found in the drum membrane of the ear. In three cases he had observed loss of smell and of memory following influenza. The majority of these cases could be relieved without surgical interference, unless there had previously existed a polypoid degeneration or some other abnormal condition. Because of the prostrating effect of the disease, the patient should be put to bed at once. The salicylates, combined with the bromides, had given him the best results in the constitutional treatment. He avoided the use of opium and of the coal tar products. To relieve the pain he used dry heat or a very weak saline solution of adrenalin—one to eight or twelve thousand. The mistake was often made of using too strong a solution; thus causing excessive reaction. The pain was due to retention of secretion.

DR. SHIELDS objected to the use of adrenalin in any disease of the frontal sinuses in which there was acute inflammation. He preferred a weak solution of cocain or of eucain.

Various Operative Procedures for the Relief of Chronic Suppurative Otitis Media, and Their Comparative Value, by Edward B. Dench, New York.

His remarks were confined to chronic cases in which suppuration had persisted in spite of the ordinary measures. In all cases the cause of the otorrhœa was diseased bone within the tympanic cavity. In order to effect a permanent cure it was necessary that all the diseased foci should be removed, and that any wound resulting from the surgical interference should be made to heal as quickly as possible, in order that all regions previously diseased might be quickly covered with normal epithelium. In cases where the caries was confined either to the ossicles, or to the ossicles and those parts of the tympanic cavity which were easily accessible through the external auditory meatus, excision of the ossicles and thorough curettement of the tympanic cavity through the external auditory canal constituted the ideal procedure, both on account of its simplicity and its safety. The author showed, both from his own statistics and

those of other operators, that the simple operation of removal of the ossicles and thorough curettement of the tympanum effected a cure in at least one-half of the cases operated upon, and he advised this procedure, provided the cases submitted to the operation were carefully selected. In this operation the author emphasized the necessity of a thorough and complete search for the incus, because this ossicle was most frequently the initial seat of the intratympanic caries, and, if only a small fragment remained, this would be sufficient to keep up the suppuration. It should be remembered that the incus usually lies close to the margin of the tympanic ring. Occasionally it may be displaced into the lower part of the tympanic cavity by the operator in extracting the malleus. The speaker drew attention to the fact that, while many operators considered the operation as finished with the removal of the ossicles, it was important to bear in mind that the operation was not complete until all diseased bone had been removed from the tympanum by the thorough use of the curette. Hæmorrhage could usually be controlled by packing with sterile gauze strips, or with gauze strips saturated in a sterile solution either of adrenalin chloride or of suprarenal extract. When there was extensive caries of the middle ear, it was necessary to thoroughly expose the tympanum and the adjacent cells by the free removal of the osseous walls. When the mastoid cells were also involved, the mastoid antrum was entered as the initial step of the procedure, and the author advised this as the first step in practically every case in which the radical operation was indicated. His custom was to make the incision through the soft parts, five-sixteenths to one-half inch behind the line of the posterior auricular fold. The anterior flap was then dissected forward, and the posterior margin of the bony meatus exposed. The author found that, if he dissected out the fibro-cartilaginous meatus from the bony canal, that this membranous tube would rupture posteriorly close to the level of the drum membrane. He favored entering the mastoid antrum through the cortex, rather than following the course advised by Stacke, of entering the mastoid antrum through the external auditory canal, as the initial procedure. The operator was next advised to follow the upper wall of the external meatus inward, and remove the floor of the tympanic vault, thus throwing the tympanic vault and the antrum into one large cavity. The next step was to break down

the bridge between the opening already made in the mastoid and the external auditory meatus. This procedure involved the removal of the posterior wall of the external auditory meatus. This should be done freely, the bridge being taken away completely down to the floor of the external auditory canal, as far inward as two-thirds of the length of the canal—that is, the outer two-thirds of the posterior wall of the meatus should be removed completely and made continuous with the mastoid opening. It was considered unsafe to remove the posterior wall of the canal to this extent throughout its entire depth, for fear of injuring either the facial nerve or the horizontal semicircular canal. If the bone was removed according to the plan already described, the horizontal semicircular canal and the aquæductus Fallopii, lying just below it, could be easily seen by the operator, and all diseased bone remaining could be removed without injury to these structures. Where the mastoid cells were pneumatic, these were to be thoroughly explored until firm bone was reached. Hæmorrhage sometimes constituted an obstacle to the operation, but could always be controlled by firmly packing the cavity with gauze. In some instances the operation was prolonged on account of persistent oozing from the bony structures, but in no case was hæmorrhage so severe as to prevent the completion of the operation. The middle ear and the mastoid having been thoroughly cleared out, it was next necessary to provide an epithelial lining for the extensive bony cavity thus formed. Such a cutaneous lining was obtained by forming flaps from the posterior wall of the fibro-cartilaginous meatus and from the concha. The exact form of flap to be employed must vary with each individual case. The writer had found that in most cases it was wise not to limit these flaps to the fibro-cartilaginous meatus, but to take some tissue from the concha as well, in order to secure a larger amount of cutaneous covering for the exposed bone. He had also found that it was of material advantage in most cases to dissect out the fibro-cartilaginous tissue from these flaps, so that the integument might be applied more perfectly to the bony walls of the cavity. There was danger in this operation of injuring the facial nerve, the horizontal semicircular canal, the labyrinth, and the lateral sinus. Any of these accidents could usually be avoided by care on the part of the operator. Comparing the results of these two operations upon the function

of the organ, the writer stated that the surgeon could generally promise that the hearing would probably not be worse after the simpler operation of removal of the ossicles, but would, in the majority of cases, be improved. The effect of the radical operation upon the hearing was somewhat uncertain. In many cases it remained the same as before the operation; in a few it was made worse, and in others the hearing was improved. It was, therefore, wise, prior to the performance of the radical operation, to caution the patient that the function of audition might be greatly impaired as the result of the operative procedure.

Chronic Suppurative Otitis Media. When Should Radical Surgery be Employed in Its Treatment, and of What Should This Consist?
George L. Richards, Fall River, Mass.

Out of sixty-four cases of brain and cerebellar abscess he had found 82 per cent. to be the result of long standing chronic purulent otitis media. Out of nine thousand autopsies at Guy's Hospital the cause of death in two-thirds of one per cent. was chronic suppurative otitis media. The small proportion, however, was no argument for shirking the duty of explaining to the patient that he was carrying around in his head what was equivalent to a charge of dynamite. According to his experience, hearing was generally improved by operation. Ossiculectomy was advised by many aurists as the first operation to be done. Distressing nausea and vertigo often followed this operation, and facial nerve paralysis, lasting several months, was sometimes observed. He, therefore, preferred in most instances to do the radical operation. It was essential to have good illumination for this operation, preferably that obtained from the forehead electric light. The tympanic opening of the Eustachian tube should not be overlooked in the process of curetting the cavity. Most of his patients had left the hospital in less than two weeks after the operation, and several of them in another week had returned to work. The after-treatment, though simple, might last from six weeks to six months.

S. MACCUEEN SMITH, Philadelphia, advocated the early recognition and treatment of acute suppurative otitis, in order to prevent many of these cases from becoming chronic. A very large percentage of these cases could be cured if proper treatment were early instituted. Early paracentesis could do no harm, and

would often arrest the process before suppuration had begun. His experience had been that in a rather large percentage of cases in which the tympanic operation had been done, the radical operation would be subsequently demanded. He preferred the Stacke-Schwarze operation because of the diminished danger to important contiguous structures. The lateral sinus was certainly more forward in those chronic cases, as pointed out in Dr. Richards' paper. The effect on the hearing was of slight and secondary importance.

R. C. HOLMES reported another case of facial paralysis coming on after ossiculectomy and curetting of the upper and posterior wall. Complete paralysis developed on the seventh day, and disappeared in about two weeks. He had never been in favor of the Stacke operation because of the liability of wounding important structures. The study of a great many temporal bones and taking plenty of time in operating would minimize these dangers. He had frequently exposed the dura and the lateral sinus, and did not think there was any danger in so doing. He preferred to open up and see what he was doing, so as to effect a permanent cure. He believed that there should be 100 per cent. of cures after one or more radical operations, barring intracranial complications. He was satisfied that Dr. Dench's method of using the incus hook was better than that taught him by Schwarze, and he had proved by actual experiment that by the latter method there was danger of dislocating the incus into the antrum. He preferred to do the plain Schwarze-Stacke operation, and the actual time of operation with him varied from twenty minutes to an hour and a half. If one cut freely into the cartilage, one was likely to have perichondritis result, with consequent shrinkage of the ear. In the majority of cases he left the wound open at first, allowing it to close in the second or third week. In young persons it could sometimes be closed at once. In the vast majority of cases the hearing had been better, or not injured. Chronic suppuration, even of a low grade, was unquestionably deleterious to the general health, as was shown by a slight rise of temperature and a sallow complexion. The mouth of the tube should be most thoroughly—almost severely—curetted. According to his experience, the after-treatment was very important, and it seemed impossible to drill the average hospital interne in a short time to dress these wounds properly.

JAMES F. McCAW, Watertown, N. Y., asked what was the experience of the members with ossiculectomy as to the formation of a new tympanic membrane, and what had been the effect on audition. This question was prompted by personal experience. Subsequent to this new membrane formation improvement in hearing had been afforded by the use of the Valsalva method. Immediately after the operation the hearing had been enormously augmented. The formation of the tympanic membrane had required about two years.

M. D. LEDERMAN, New York, said that he thought all would agree that the radical operation would be the future treatment of chronic suppurative otitis media, but the dangers must be taken into consideration. At the last meeting of the society he had reported a case in which there had been a malposition of the lateral sinus. In using the chisel heroically, one was apt to make too rapid progress. Where there was mastoid involvement there was danger of sinus thrombosis from the opening of a sinus previously healthy. He knew of three such cases; hence the necessity for the cautious removal of the diseased tissue around the sinus. He recalled a case in which re-formation of the drum took place in four weeks, the case being one of long standing suppuration. At that time the patient complained of pain, and, fearing retention of secretion, the membrane was removed, and also some granulation tissue found in the attic. This caused severe vertigo and vomiting, which necessitated the patient's remaining in the office for two hours. One of his cases had been compelled to stay in bed for two weeks because of severe vertigo and projectile vomiting. He would again insist upon the great importance of thoroughly curetting the tympanic orifice of the Eustachian tube.

ROBERT LEVY asked what was the average length of time the discharge lasted after the two-flap methods described; also in those instances in which the posterior wound was allowed to remain open for three or four weeks, what was the after-treatment of this portion?

DR. DENCH said that the drum membrane sometimes re-formed, and it seemed often to make the hearing worse. He did not think the special flap method had any effect on the time the

discharge lasted ; he ordinarily expected this time to be from six weeks to two months.

A Nasopharyngeal Tumor, by G. Hudson Makuen, Philadelphia.

The patient, a youth of eighteen, was exhibited having a tumor attached to the posterior third of the left nostril and to the vault of the pharynx. Both nostrils were practically occluded, the tumor filling the vault of the pharynx. A small section of the growth had been examined by Dr. David Riesman, who reported it to be an œdematous fibromatous growth characterized by stratified epithelium. On July 7, 1901, under ether, a portion of the growth had been removed with a snare and No. 10 wire. It was very vascular and the operation was followed by considerable hæmorrhage. This specimen was examined by Dr. W. M. L. Coplin and thought to be granulomatous. Nothing had been done since that time, and the patient had become apathetic in regard to it. There had not been much change in the case, except the appearance of an infiltration of the muscles of the cheek. Antisyphilitic remedies had been employed without effect.

H. W. LOEB said he did not place over much reliance on the diagnosis by the microscope of this class of cases. He would suggest that in this particular case electrolysis be used. He had seen marked improvement in three such cases, not only in a reduction of the vascularity, but in the size of the growth, and others had reported good results. One of his cases had been kept under observation about ten years. He did not like the infiltration in the cheek, because one of his cases that proved to be malignant had acted in a similar manner ; the mass proved to be an extension of the growth around the posterior surface of the superior maxilla. In one case thought to be a fibrosarcoma with elastic fibers, the tumor grew from the vicinity of the Eustachian tube. The course of the case did not point to its being a sarcoma.

EWING W. DAY, Pittsburg, said that he had unfortunately met with a number of such cases. One of them was a very extensive fibroma. The patient would not consent to the removal of the superior maxilla, so he had made the incision as for that operation, except not going under the eye. He had then cut into the

maxillary antrum and cut away the inner wall of the antrum, leaving the nostril attached to the outer border of the bone. When the antrum and the nasal cavity were thus thrown into one cavity he was able to reach the root of the growth, and remove it without producing much hæmorrhage. He had been surprised at the wide field of operation thus obtained. This operation had been done three years ago, and there had been no recurrence. If he had to do the operation again he would leave only a ridge to anchor the nose to, and so prevent the ballooning that now takes place in this patient when blowing the nose.

J. A. STUCKY said he believed that if this infiltration of the nose were left untreated it would require an external operation. From his own experience he felt that it was not possible to make a snare that would remove the tumor from Makuen's patient. Mention was made of an exceedingly trying case of the kind that had fallen to his own lot.

J. O. MCREYNOLDS, Dallas, Tex., advised using a cold wire snare, and holding it in position while an assistant tightened the snare as much as possible. Having made a pedicle in this way, the galvanocautery loop should be thrown around the growth. This method would allow some of these growths to be removed that would ordinarily break snare after snare. A case was cited in which the superficial layers of the growth indicated only fibroma, but examination of the deeper ones showed sarcomatous elements.

M. D. LEDERMAN, New York, said that he had some experience with Dr. Dawbarn's method of operating in order to starve out these growths in the rhinopharynx, and he would suggest that Dr. Makuen consider this method in connection with his case. A case was referred to in which the patient had been seen five years after the Dawbarn operation and there had been at that time no return of the growth.

EDWARD B. DENCH remarked that Dawbarn's method embraced ligation of the external carotids and their branches, with complete excision of the ligated vessels.

G. H. MAKUEN said that it had been impossible to get the cold wire snare around the tumor, because it extended so far down on the posterior pharyngeal wall. The patient and his family would probably not consent to any other radical operation.

Tuberculosis of the Middle Ear, with Report of Cases.—MAX A. GOLDSTEIN, St. Louis, believed that primary tubercular infection of the ear was not only possible but more frequent than generally believed. In substantiation of this a case was reported in which careful physical examination showed no tuberculosis elsewhere, yet subsequently an acute miliary tuberculosis developed in the lungs and was proved to exist at autopsy. It was thought to be secondary to the tuberculous process in the ear. Altogether five cases were reported, which were believed to be examples of primary tuberculosis of the middle ear. There was no family history of tuberculosis in these cases.

ROBERT LEVY, Denver, said that if we more frequently resorted to such microscopical examinations the literature of this class of cases would probably be extended. While not questioning the diagnosis at all, he would suggest that in some cases in which tubercle bacilli were found there was the possibility of the extraneous presence of the tubercle bacilli.

E. B. DENCH also expressed the opinion that this method of systematic examination, if extended, would probably show evidence of tuberculosis in very many more cases. This had been the experience in joint tuberculosis. The paper was certainly most instructive and suggestive.

J. O. McREYNOLDS reported the case of a child six years who had been brought to him with O. M. S. C. Complete cure followed a radical operation. Two years later the patient developed disease of the spine and hip joint, and died of tubercular meningitis. He looked upon this case as an example of primary tuberculosis of the middle ear. He would like to know if there was any scientific ground for the popular notion that the healing of a tubercular process in one part of the body would result in its breaking out in another part.

H. W. LOEB said that tuberculin should be used in these cases with a view to determining the presence of tuberculosis elsewhere. He did not think a reaction would be obtained from the process in the ear.

G. L. RICHARDS asked for the experience of Dr. Levy with regard to the tuberculin test.

DR. LEVY said that in very incipient cases of tuberculosis the tuberculin had often cleared up the diagnosis, but he had never used it in connection with purely local tuberculosis.

WM. L. BALLENGER, Chicago, said that he had had no experience with the tuberculin test in local processes, but he had observed its action in incipient tuberculosis. He mentioned two cases in which experts in physical diagnosis had found no pulmonary tuberculosis, and yet the appearance of the larynx suggested tuberculosis, and the application of the tuberculin test produced the characteristic reaction. He saw no reason why tuberculosis should not be primary in the larynx and in the middle ear.

JOHN A. THOMPSON, Cincinnati, said that it was claimed that tuberculosis is always first a disease of the lymphatic glands, either of Waldeyer's ring or of the intestines, and that tuberculosis never occurs in the lungs until the lymphatics at the root of the lungs are first involved. This, he thought, would enable one to make a diagnosis of tuberculosis before there were any physical signs in the lungs. In cases of obstinate catarrhal laryngitis with an evening rise of temperature, even without physical signs, he favored making the diagnosis of incipient tuberculosis and sending the patient to a proper climate. He had known several such cases to subsequently develop pulmonary tuberculosis.

DR. GOLDSTEIN said that the remark made by Dr. Levy simply corroborated his own view with regard to the possibility of local tubercular infection.

Report of a case in which Laryngeal Symptoms complicated Purpura Hemorrhagica, Joseph T. Gibb, Philadelphia.

The patient, a man of forty-two, three weeks before this report was vaccinated; ten days later the legs became swollen and a hæmorrhagic rash appeared upon them. About this time there was a bloody discharge from the bowel. There were subsequent crops of hæmorrhagic spots, and eventually the urine became bloody. On December 19 the speaker had first seen him because of an attack of dyspnœa and crowing respiration that had lasted for thirty-six hours. The entire larynx was

red; the breath sounds were weak and there was marked laryngeal stenosis. On the following day, after vomiting much chocolate-colored mucus, the breath became nearly normal, and the larynx showed less infiltration and the surface of the mucous membrane was covered with fluid blood. An application of cocain and adrenalin gave marked but temporary relief, the hæmorrhage recurring, and the patient dying the next day of exhaustion. Evidently the dyspnœa was due to hæmorrhagic œdema of the submucosa of the larynx similar to the subcutaneous purpuric spots in simple cases. The relation of the illness to the vaccination was interesting but by no means clear. The possible relation between the adrenalin and the last hæmorrhage was also worthy of consideration.

Hæmorrhage in Nasal Operations.—JOHN O. McREYNOLDS, Dallas, Tex., instead of reading his paper reported one case of severe hæmorrhage occurring after the use of adrenalin. Removal of an exostosis, situated rather high in the nose, was followed by hæmorrhage almost immediately after leaving the office, which in about two hours almost exsanguinated the patient. The hæmorrhage was controlled by packing the posterior nares.

W. FREUDENTHAL, New York, exhibited a device which he used for controlling hæmorrhage during and after operation. It consists of a double ice bag which is applied like a saddle over the nose, and is strapped around the head. In addition, he obtained valuable assistance from the use of stypticin internally.

J. A. THOMPSON thought the hæmorrhage was due to injury of one of the small arteries of the septum. Hæmorrhage could be much more easily controlled by the use of cotton saturated with a styptic than by the use of gauze.

J. A. STUCKY said that adrenalin should be used in the strength of one to six or eight thousand. He used a little strip of dental rubber, over which is placed a piece of Bernay's sponge or a splint.

H. BERT ELLIS, Los Angeles, Cal., believed that hæmorrhage was much less likely to occur after adrenalin alone than after the combination of adrenalin and cocain. Patients put on the chloride of calcium prior to operation were rarely troubled with secondary hæmorrhage.

M. A. GOLDSTEIN saturates the gauze with oil or melted vaselin in order to make it impervious, and hence, suitable for controlling hæmorrhage. He believed the Simpson modification of the compressed cotton splint, shaped in the form of a nasal plug, was a very satisfactory means of controlling nasal hæmorrhage.

A Physiological Statement of some of the Symptoms of Mouth Breathing.

WM. L. BALLENGER, Chicago, presented this paper. He said that examinations of guinea pigs which had been kept in an atmosphere saturated with starch powder and nitrate of silver showed a remarkable thickening of the lining of the air vesicles, and this had led him to suspect that possibly a pathological change in the air vesicles might in some way cause an auto-intoxication which would find expression clinically in mouth breathing. In this class of cases the respiratory function of the nose is lost, and he did not doubt that this loss resulted in certain changes in the respiratory apparatus of the lung which impaired its capacity to carry on the interchange of gases. Faulty metabolism necessarily resulted, and carbon dioxid accumulated in excess in the blood, and then acted as a violent poison to the leucocytes. The scavenging function of these cells is thus impaired and the "half way" products of oxidation are left to circulate through the system. Oxygen being taken up in deficient quantity still further adds to the toxic properties in the blood, and gives rise to the nervous and developmental phenomena so familiar in mouth breathing in children.

It seems rational, therefore, to him to assume that the symptom complex of mouth breathers is largely due to some change in the air vesicle walls of the lungs, whereby the normal interchange of gases (oxygen and carbon dioxid) is interfered with.

EUGENE VANSANT, Philadelphia, thought the cases in which nasal respiration was abolished were very rare. In a case of severe adenoids in a child there would still be found nasal respiration during sleep. If these persons were true mouth breathers there would not be much difficulty; it was because they remained nose breathers that nervous disturbances arose. There was not the slightest doubt that there was immense thickening of the

epithelial lining of the pharynx and larynx, but he was disposed to doubt that such thickening extended to the air cells except in severe cases of long standing.

J. A. THOMPSON said that the interchange of gases was practically an osmosis, and it was well known that this would not take place through a dry membrane. Where nasal respiration was abnormal the pulmonary alveoli became unnaturally dry [?], and this was probably one of the features in the deficient osmosis and oxidation of the blood.

W. FREUDENTHAL said that some years ago he had made a number of experiments on this subject, and had found that children with abnormal adenoids gave off about one-ninth or one-eighth of the normal quantity of moisture. Four months after the removal of the adenoids one boy gave off about the normal amount of moisture from the nose. If the nose failed to supply the moisture to the air this would be supplied for a time by the pharynx, but the latter would soon fail also.

DR. BALLENGER, in closing, said that it was not necessary to have complete nasal obstruction in order to produce the pathological conditions discussed in his paper. The point made by Dr. Thompson seemed to him very well taken.

Electric Light in Diseases of the Respiratory Organs, Dr. W. Freudenthal, New York.

At first he had hoped to affect the deeper tissues by the actual passage of bactericidal rays into them, but it was found that these just penetrate the epidermis and cutis. In studying the therapeutic effects of the electric light one must distinguish between the incandescent and the arc light. The author said that he had been experimenting on this line as early as 1889. He had found the arc light preferable even for the larynx. He made use of the ordinary search light, in front of which the patient sits at a distance of six or eight feet. Most of the screens suggested for removing the heat were objectionable because they absorbed in large amount certain other important rays. He used the electric light in the treatment of both laryngeal and pulmonary tuberculosis, and although he had never cured an advanced case by this means the treatment was of value just as was the use of

morphin, heroin, or hydrotherapy; indeed, the electric light treatment stood on the same level as hydrotherapy, but was superior to the latter because it relieved pain and facilitated expectoration.

Because of the neurotic element in cases of hay asthma the results of electric light treatment had been even more conspicuous.

H. HOLBROOK CURTIS asked the effect of direct sunlight on laryngeal phthisis.

ROBERT LEVY said that he had never been able to satisfy himself, from the published reports, that the application of sunlight or artificial light was an important adjunct to the treatment. Equally good results, he thought, could be obtained in high altitudes where sunlight was most abundant.

DR. FREUDENTHAL said that he had applied sunlight and was accustomed to advise his patients to expose themselves to sunlight, preferably while undressed.

ABSTRACTS FROM CURRENT LITERATURE.

Dionin in Hæmorrhagic Glaucoma.—Albert Terson.
—*Ophthalm. Klinik*, 1901, No. 17.

Glaucoma complicated retinitis albuminurica. The pains were so intense, and resisted all measures so obstinately, that enucleation of the eyeball was considered. As a final resource dionin was tried, a solution of 1 : 40 being dropped into the eye twice daily. The effect was most striking and prompt, and the patient thus narrowly escaped the operation. This analgesic action of dionin was also observed in other affections of the eye, and is confirmed by various authorities.

J. L. M.

Some Observations on a Case of Total Color Blindness.—Prof. W. A. Nagel, Freiburg-im-Breisgau.—*Arch. of Oph.*, May, 1902.

A male myope, with nystagmus and strabismus, who used color terms and believed he distinguished blue, red, yellow, and green perfectly, but did not.

When central scotoma is not found in a case of total color blindness, it may be on account of defective method of examination. Uhthoff, with new methods, found it in the case previously reported by Prof. A. v. Hippel.

In almost all reported cases of total color blindness there has been nystagmus, either constant or transitory. Amblyopia of equal degree, caused by other conditions, does not usually cause nystagmus.

This patient perceived the after-image most clearly when the luminous point was moved backward and forward in a small arc (instead of turning in a small circle); when the movement was stopped or reversed, the secondary image passed into the primary, and reappeared on the other side. It seems, with our present knowledge, most likely that there is a double excitation in the rods. Prof. Nagel does not consider justifiable Hess's attempt to explain the after-images observed with red excitation, on the theory of complementary colors.

J. L. M.

Phlegmon of the Orbit after Extraction of a Tooth.
—Otto Hallauer.—*Arch. of Ophth.*, May, 1902.

An interesting case, with a valuable bibliography. The tooth was carious, the alveolar process injured; the night after extraction there was severe pain in the right side of the face, with chills, and on the fifth day he presented himself with advanced severe orbital cellulitis. In eleven weeks suppuration had ceased, R. V. = one-half, and the patient eloped. In 1894 Hirsch collected twenty-five cases.

There is a venous network in the periosteum of the anterior surface of the superior maxilla, which enters the vena ophthalamo-facialis, and thus is in connection with the vena ophthalmica, superior and inferior (Gurwitsch).

In youth the second teeth are so arranged between the milk teeth and the lower margin of the orbit that a direct communication exists, particularly in the case of the canines and the molars. A persistence of these relations appears in adults in a fine vascular channel that from the alveolar process, chiefly near the canines, passes up in the substance of the jaw to the lachrymal sinus and the lower margin of the orbit, and so furnishes a connection between tooth and orbit (Parinaud).

In this case the infective matter passed from the alveolar pro-

cess into the antrum, and thence through the venous anastomoses into the orbit. In the process the purulent masses rarefied the wall of the nose, and on the sixth day escaped through the right nostril.

J. L. M.

A Case of Stab Wound in the Occiput, Followed by Homonymous Hemianopsia.—Harry Friedenwald, Baltimore.—*Arch. of Oph.*, May, 1902.

The few recorded cases of this complex are referred to in a bibliography. The knife entered the middle occipital lobe within 1.5 cm. of the median line [strangely enough we are not told upon which side], cutting into the brain tissue about 1 cm. long, and probably 1.5 cm. deep, judging from the bent knife. The patient, upon receiving the blow, fell to the ground, "blind from that moment," but did not become unconscious until after reaching camp, eight miles away. He remained unconscious two or three weeks. A year later examination reveals typical left hemianopsia—not able to see even a bright candle light held close to the face on this side. Pupillary reflexes normal, responding equally when light is thrown from either side. Fundi normal, movements of the eyeballs normal. Central vision and right fields normal for form and color. Epileptiform convulsions—for six months—preceded by giddiness, or blindness, visions of red, blue and black spots, and images of persons; sees nothing on the blind side but flashes of light, or the blind side (while stooping) will suddenly turn blue, or a little gray, "so that he has to close the eyes and lie down." In an observed fit there were twitchings of the face and extremities, the eyes were turned upward and to the left, pupils moderately dilated, slight frothing at mouth; completely unconscious several minutes. Followed by cloudy mind and slight frontal headache. Operation revealed no gross injury. Bone wound perfectly smooth within and without; a small scar in the dura, which was "weakened" at this point, dura and pia adhered together. A small, smooth cicatrix was felt in the surface of the brain.

Dr. Friedenwald concludes that the symptoms are best explained by hæmorrhage. There was no mind blindness, amnesic color blindness, nor visual hallucinations other than in the aura.

J. L. M.

Temporary Amblyopia, especially if with migraine, may be due to spasmodic contraction of retinal arteries. At the Ophth. Society of the United Kingdom (*Brit. Med. Jour.*, May 10, 1902), a woman was shown who had suffered for ten years from severe headaches with temporary loss of vision; amblyopia had persisted since an attack in September, 1901, and the ophthalmoscope revealed obliteration of a retinal artery—probably endarteritis obliterans, as a spasm would hardly persist eight months.

J. L. M.

On the Elastic Tissue in the Human Eye, with Remarks Upon the Dilator Pupillæ Muscle.—Kyoji Kiribuchi, Tokyo (Berlin).—*Arch. of Ophth.*, May, 1902.

In the eye of the young, and particularly the newborn, the elastic fibers are finer and less numerous than in adults.

There are no elastic fibers in the middle of the cornea; they never extend more than 2 or 3 mm. from the corneal margin; in adults there are numerous fine, wavy fibers at the periphery which take Weigert's stain followed by orcein. (Weigert's, 1898, method is described.) The membrane of Descemet stains like the elastic fibers, and passes over into the elastic fibers of the chamber angle. The sclera is comparatively rich in elastic fibers; they are especially numerous in the episcleral tissue, where the sclera and choroid join, and at the insertions of muscles and tendons. There is an elastic fiber ring around the porus opticus. In adults the lamina cribrosa has the appearance of consisting entirely of elastic tissue; this is not the case in the new-born, although here the scleral ring is well indicated.

In glaucomatous excavations, the floor of the excavation is formed of a layer of compressed elastic fibers, behind which proliferated connective-tissue is seen. In the trunk of the optic nerve, the elastic fibers diminish in number from the posterior surface of the lamina cribrosa to the optic foramen. Here they increase again, and then become less toward the chiasm.

The parenchyma of the iris is poor in elastic fibers; has only a few circular ones at the root, and sometimes a few in the sphincter. There are many elastic fibers in the vessel walls, extending even to the capillaries.

“According to my investigations, the limiting membrane is not an elastic membrane; but the posterior surface of the iris is more

elastic than the anterior, and, since the limiting membrane is not thrown into folds when the pupil dilates, it must possess a certain elasticity. Furthermore, since extreme dilatation of the pupil cannot be explained as being due to simple vascular contraction, and since no other structure than the limiting membrane exists which could produce dilatation of the pupil, this membrane, if not elastic, must be muscular. In bleached preparations stained by Van Gieson's method, or with 3 per cent. hematoxylin, I found a layer of spindle cells with elongated nuclei, just as Grunert has recently described them. I believe, therefore, that a dilator muscle exists in the human iris.

"In the ciliary body, the elastic fibers are fairly numerous, and their arrangement is very characteristic. The chief group is that which from the inner wall of Schlemm's canal spreads out fan-shaped in from five to nine bundles between the muscular fibers of the ciliary body. In the new-born these bundles are very poorly developed. The bundles here branch and anastomose with neighboring bundles, and the fibers are wavy, running mostly in a radiating direction, although some run circularly. The choroid is also rich in elastic fibers."

J. L. M.

Essentials in the Treatment of Laryngeal Tuberculosis.—Robert Levy, Denver.—*Ann. of Otol., Rhin. and Lar.*, May, 1902.

Each case and each stage of the affection should be individualized. The important guides to early diagnosis are: (1) the peculiar anæmia, (2) the irregular interarytenoid tumefactions, and (3) the defective motility of the vocal bands, which is quite out of proportion to the visible pathological changes. In the first stage the curette, forceps, and lactic acid are most satisfactory for the soft variety; for the firm fibroid infiltration stimulating the absorbents by local applications of iodine-bearing products offers probably the best products.

In the sluggish, slightly painful ulcer, stimulation by curette and lactic acid, followed by the application of iodoform, will often result in marked improvement and occasionally in cure. In the active small numerous superficial ulcerations which approach the miliary variety there is usually much œdema. The greatest caution should here be exercised in the use of too radical or irritating a remedy. Soothing, quieting, palliative and antiseptic

tic treatment should be instituted. Thorough cleansing, followed by a weak cocain or eucain solution, and this in turn by the insufflation of a powder containing morphin, tannic acid, and iodoform, after Bosworth, has in my hands frequently retarded the progress of the affection, relieving the acute symptoms to such a degree that the ulcerations have disappeared and the œdema has subsided. For extreme ulceration Freudenthal's mentholorthoform treatment has been most satisfactory, but is not curative.

"I cannot too strongly urge the importance of careful investigation into the patient's general condition. The relative importance of local and constitutional treatment should be constantly borne in mind. There are times when the distress and the exertion caused by well-meant local treatment are a severe drain upon the patient's general well-being, and will result in less good than careful attention to rest and constitutional treatment without any local treatment whatever. Patients who have no dysphagia, no distress in the larynx, whose only local symptom is hoarseness, and whose general condition indicates a tendency to rapidly progressing disease, had better be advised to give all their attention to constitutional treatment."

J. L. M.

Panophthalmitis from Infection with the *Micrococcus Lanceolatus* without a Perforating Wound of the Eyeball.—John E. Weeks, New York.—*Ophth. Rec.*, February, 1903.

A youth aged 17, admitted to hospital complaining for three days of pain and diminished vision. Diagnosis, plastic choroiditis; there was a little muco-pus in the conjunctival sac. Panophthalmitis developed and the ball was eviscerated; a protruding tough conjunctival chemosis persisted and was later operated upon.

"The infection in this case apparently proceeded from within, but its focus was undiscoverable. The case shows the possibility of infection from within in cases of slight contusion which probably reduce the vitality of the tissues, also the possibility of the entrance of micro-organisms into the circulation through lesions too small to be visible."

J. L. M.

BOOK REVIEWS.

THE DISEASES OF THE NOSE, THROAT, AND EAR. By CHARLES PREVOST GRAYSON, M. D., Lecturer on Laryngology and Rhinology in the Medical Department of the University of Pennsylvania; Physician in charge of the Department for Diseases of the Nose and Throat in the Hospital of the University of Pennsylvania; Laryngologist and Otologist to the Philadelphia Hospital. Illustrated with 129 engravings and 8 plates in color and monochrome. Lea Bros., Philadelphia and New York. Pp. 550.

Our specialty has now developed sufficiently or reached the period when it is collecting a very fine literature distinctly its own, both in the lines of books and periodical articles. The former (books) may be divided into those better suited to the student of medicine and general practitioner, and those for the specialist in this line. Almost every individual book has its characteristic feature. The feature of the above is the great care and thorough manner in which the minutiae of the performance of the local applications and surgical measures are described. *E. g.*, eight pages are given to the technique of removal of the pharyngeal adenoids, all of which is instructive. And eight pages to the treatment of chronic purulent otitis media exclusive of surgical measures, excepting removal of granulations. Not many different methods are given (usually those most efficient), but these few thoroughly.

It is pre-eminently a book for the practitioner and medical student, and the best in this class that the reviewer has seen up to the present time.

A. W. P.

SAUNDERS' AMERICAN YEAR BOOK. The Surgical Volume of the American Year Book of Medicine and Surgery for 1903. A Yearly Digest of Scientific Progress and authoritative opinions in all branches of Medicine and Surgery, drawn from journals, monographs, and text-books of the leading American and foreign authors and investigators. Arranged, with critical editorial comments, by eminent American specialists, under the editorial charge of GEORGE M. GOULD, A. M., M. D. In two volumes—Volume I, including *General Medicine*, octavo, 700 pages, fully illustrated; Volume II, *General Surgery*, octavo, 670 pages, fully illustrated. W. B. Saunders & Co., Philadelphia, New York, London, 1903. Per volume: Cloth, \$3.00 net; Half Morocco, \$3.75 net.

We are glad to commend this publication and to welcome the 1903 volume. This year the departments of Otology, Laryng-

ology and Rhinology are united under Dr. D. Braden Kyle and Dr. George Fetterolf. Drs. Ingals and Ohls resigned, and Dr. Charles H. Burnett is dead. The well-selected and well-made abstracts date back to 1900 (especially in Otology) and there seem to be as many 1901 as 1902 references; the editors it is presumed have now "caught up," and the next issue will be essentially modern, reviewing the progress of 1902.

Space permits notice of but a few of the most important articles. In Ophthalmology: Pick has noted fundus changes in 30 per cent. to 40 per cent. of cases of cancer of the stomach: grayish white retinal plaques near the optic disk, retinal hæmorrhages, and slight œdema of the papillæ.

Trantas has successfully treated forty cases of retinitis pigmentosa by the ingestion (half a pound eaten daily) of boiled or, roasted sheep's liver.

Hyoscin hydrobromate 0.5 per cent. solution establishes complete cycloplegia in an hour, and accommodation returns fully in forty-eight to sixty hours. C. H. Baker has never seen glaucoma or any other undesirable effects in over 2500 cases.

Secondary cataract discission should be subconjunctival, according to Wokenius and Kuhnt. "With the pupil dilated, the knife enters the conjunctiva 3 to 4 mm. from the limbus, passes through the sclera and the utmost periphery of the anterior chamber on a plane with the iris into the capsular membrane, when, by a sawing motion, a horizontal cut is made in the capsule from 7 to 9 mm. long, if possible, and is then withdrawn. The reaction is practically *nil*. In 216 secondary cataracts not one infection occurred, and in no instance was vision made any worse, nor did glaucomatous symptoms supervene."

After removal of the lachrymal gland, D. J. Blok reports annoying conjunctivitis, a sticky, irritating discharge, and photophobia. Struyken observed conjunctivitis after three of his eighteen operations. It was cured by treatment of the nose.

Adenoids consist of hyperplastic pharyngeal lymphoid tissue: the epithelium and fibrous tissue changes are variable, and independent of the age of the patient. Primary tuberculosis of adenoids is probably more common than most previous studies show; 16 per cent. of seventy-five specimens from children otherwise healthy (so far as could be ascertained) contained tubercle bacilli, 10 per cent. with lesions characteristic of tuberculosis.

In two adenoid operations a curette broke after its introduction : in one, under chloroform anæsthesia, the fragment was drawn down into the oropharynx with much difficulty, and removed with forceps ; in the other there was no anæsthetic, and the fragment was swallowed. Suitable diet was ordered, and three days later the broken piece, one-half by one-sixteenth inch, was passed in a stool.

Adenoids may be simulated by (1) diminutive choanæ and nostrils ; (2) low vault of the naso-pharynx, (3) paresis of the soft palate and pharynx ; (4) vomerine crest, and (5) distortion of the vertebral column.

Over five pages are devoted to local treatment of laryngeal tuberculosis : curability, indications for operation, importance of rest, curettage, lactic acid, resorcin, orthoform, cocain, morphin, heroin, benzoin, guaiacol, tuberculin. Wagner reports a traumatic dislocation of the arytenoid cartilage in a man of seventy (no fracture of the larynx), and Hirschmann reports a case, which had existed since childhood, in a patient thirty years old—evidently a traumatism at birth, or in very early infancy. Harvey's and Fenger's methods of extirpating the larynx are described at length.

Collet of Lyons extracts the intubation tube by inserting to it a curved electro-magnet, which is attached to a portable battery, making the extraction the easiest part of the operation. A. W. de Roaldes extends the core of the Haab magnet by attaching a vertebrated metallic bougie for extracting metallic foreign bodies from the trachea or bronchus. By interrupting the current, the foreign body can be coaxed along "by a series of magnet pulsations rather than by steady traction."

Local Anæsthesia in the Ear.—Albert A. Gray limits the dose of cocain in anilin oil and rectified spirit to 20 minims as a maximum for adults, with a corresponding limitation for children. Two cases of intoxication were reported. H. Dupuy claims complete anæsthesia of the membrana tympani for paracentesis in a few moments after instilling :

Cocain	0.3—0.6 (gr. v—x)
Alcohol (pure)	4.0 (f 3 j)
Anilin oil	4.0 (f 3 j)

Relation of the Facial Nerve to the Tympanum.—The upper margin of the oval window is formed by the protruding facial canal, which passes forward a few millimeters to the geniculate

ganglion, and then passes deeply into the petrous bone. Behind the oval window it curves downward to pass about 3 mm. behind the middle of the posterior margin of the annulus, then descending vertically to its point of exit at the stylo-mastoid foramen. When approaching it through the mastoid a useful anatomic guide is the bony protuberance on the inner wall of the antrum, which marks the external semicircular canal and the facial canal; from this point the course of the nerve is exactly vertical.

Otitis Media Neonatorum.—The baby's Eustachian tube is very short, and is actually wider than in the adult. How easy for vomited matter to enter, especially if there be adenoids! Should breathing occur before delivery, amniotic fluid may enter the middle ear. By the eighth month of fetal life the tympanic cavity is well formed, containing a cushion of mucous membrane. With distention of the cavity by respiration after birth, this hyperæmic mucosa becomes absorbed; the natural detritus may remain in the ear for a longer or shorter time. In the young child the secretory organs of the upper air passages are extremely active and well developed. The recumbent position is favorable to aspiration and to the infection of a soil which contains considerable gelatinous tissue, and is eminently suited for the development of micro-organisms.

Thrombosis of the Lateral Sinus Following Middle-ear Suppuration.—Unless looking and feeling perfectly healthy, it is to be incised for exploration; the aspirating needle is no longer used, as it has withdrawn fluid blood in cases of infection clot. If upon incision the vessel is found filled with a firm, well-organized fibrinous clot, this should not be removed. The wound should be firmly packed with iodoform gauze, the area of the sinus being carefully isolated from the tympanum and mastoid cells. The dressing may remain four to six days, and should not be removed unless the temperature rises suddenly to 103° , or over.

The sulphocyanates of potassium and sodium are usually absent from the saliva in suppuration of the middle ear. To the collected saliva add a saturated solution of hydriodic acid one part, and starch paste five parts; a blue tint appears if the sulphocyanates are present.

Displaced Mastoid Cells.—In six out of one hundred temporal bones of persons of all ages with non-diseased ears, misplaced cells were separated from the mastoid cells by a layer of compact

bone. Frequently a part of the cells are displaced either near the dura, or proximate to the sinus. In five patients they have been overlooked, and subsequently given rise to meningitis or jugular phlebitis.

The cricothyroid muscle, H. Krause concludes, is an automatic and concomitant expiratory muscle (antagonistic to the posticus muscle); it is capable of placing the glottis in the essential position for phonation the moment expiration begins. Juarez says the thyroid cartilage is the origin, and the cricoid the insertion, of this muscle; so he would reverse its name.

The book is handsomely gotten up, the illustrations are good, the printing, paper and binding are fine. We are glad to learn that W. B. Saunders & Co. have established a branch office in New York at the junction of Twenty-third Street, Broadway, and Fifth Avenue. Physicians visiting New York are cordially invited to make these offices, in "The Flatiron," their headquarters, where they can receive and answer their correspondence.

J. L. M.

A TEXT-BOOK OF CLINICAL MEDICINE. PRINCIPLES OF DIAGNOSIS. By CLARENCE BARTLETT, M. D., Professor of Clinical Medicine and Associate Professor of Medicine in the Hahnemann Medical College of Philadelphia; Senior Neurologist to the Hahnemann Hospital, etc. Pp. 976. With 245 illustrations, including six colored plates. Boericke & Tafel, Philadelphia, 1903. Cloth, \$7.00; half morocco, \$8.00; expressage extra.

The beautiful typography, paper and binding, and the good illustrations make it a pleasure to see and to handle this volume, which is not at all cumbersome. The mechanical part is a credit to the publishers, enhancing their already enviable reputation.

Our friend, the author, has conferred a benefit upon the medical profession and upon humanity by giving us the best work on diagnosis yet published. Clearly and succinctly expressed and arranged, its twenty-three chapters hardly need the rich index of twenty-eight double-column pages.

The work follows the lines one employs in examining a case, taking up the symptoms, their clinical relations and diagnostic importance. Dr. Bartlett wisely says: "To label a given case of illness with the name of one or the other diseases described in the standard works of medicine is not making a diagnosis, because the standard clinical types as described in such works are the exception, and not the rule. We must . . . obtain an

adequate conception of all the pathological changes taking place in the patient, . . . even though we are unable to present our conclusion in the shape of some set title. We must treat the patient, not the disease." Treatment is reserved for another volume.

Our author has no doubt of the existence of functional hemianopsia, if reference is made only to transitory attacks of this symptom ; he is doubtful if lithæmia and gout could produce hemianopsia without first altering the structure of the visual fibers. Seguin is quoted, that in two out of nine cases of homonymous hemianopsia hemiopic hallucinations appeared in the subsequently blind field prior to the onset of the blindness.

Thirty-one pages are specifically devoted to the eye, twenty to the ear, twenty-two to the nose, twenty-eight to the larynx, with five and a half on lesions of the optic chiasm, optic tract, and visual centers in the chapter on "Cerebral Localization," etc.

As the specialist should never forget that he is working upon a component part of the living body, he will find this book a very valuable, practical, handy addition to his library. J. L. M.

THE MATTISON METHOD IN MORPHINISM. A Modern and Humane Treatment of the Morphine Disease. By J. B. MATTISON, M. D., Medical Director Brooklyn Home for Narcotic Inebriates. Published by E. B. Treat & Co., New York, 1902. Price \$1.00.

This is a description of the treatment that is administered by the author in his sanitarium, and is deduced from the author's thirty years' experience in treating this disease. A. W. P.

HISTORY OF THE HAHNEMANN MONUMENT. Historic Sketch of the Monument erected in Washington City under the auspices of the American Institute of Homœopathy to the honor of Samuel Hahnemann and for the ornamentation of the National Capital. Dedicated June 21, 1900, in the presence of the President of the United States and with the active participation of public officials, civil and military. Compiled for the Monument Committee by the Rev. B. F. BITTINGER, D. D., Washington, D. C., from materials collected by the late Henry M. Smith, M. D., Secretary. Publisher, G. P. Putnam, New York. Regular edition, \$1.00 ; edition de luxe, \$2.00.

Beside the above explanation of the finest monument in Washington, we would note that there are a concise sketch of the life of Hahnemann and nineteen very finely executed illustrations, including our revered ex-President William McKinley, Hahnemann,

the several committees, and photographs of scenes during the dedicatory exercises.

It is an exceedingly interesting little volume to every homœopath. A good book for the waiting-room table. A. W. P.

SAUNDERS' MEDICAL HAND ATLAS SERIES. ATLAS AND EPITOME OF DISEASES OF THE MOUTH, PHARYNX, AND NOSE. By Dr. L. GRUNWALD of Munich. Second edition, revised and enlarged. Authorized translation from the German. Edited, with additions, by JAMES E. NEWCOMB, M. D., Instructor in Laryngology, Cornell University Medical College; Attending Laryngologist to the Roosevelt Hospital, Out-patient Department, and to the Demilt Dispensary, New York City. With 102 illustrations on 42 lithographic plates, and 41 figures in the text. Philadelphia and London: W. B. Saunders & Co., 1903. Pp. 220. Cloth, \$3.00.

This is a good counterpart of the same author's Atlas on the Larynx, which we had the pleasure of reviewing about four years ago. We say of this new volume as we did of the former—that it is a collection of the most naturally colored lithographic plates that have been published in any book in the American language. The tinting is more delicate and subdued, true to nature, the specimens portrayed are quite characteristic of the diseases they represent. Each is accompanied by a short history and recommendation as to treatment, thereby making it as near like clinical instruction at hospital as can be attained.

We consider this book very valuable alike to the student, the practitioner, and the specialist. A. W. P.

THE JOURNAL OF OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY.

EDITOR,
JOHN L. MOFFAT, M. D.

ASSOCIATE EDITOR,
A. W. PALMER, M. D.

EDITORIAL.

PERITONSILLAR ABSCESS, peritonsillar phlegmon, are these synonyms? By many they are so considered; therefore, to conform to a widespread, and we think erroneous idea, is it probable that such an authority as Kyle, in his text-book, refers to them as such. Jonathan Wright says, "one is Latin and the other Greek."

May we not consider this in two lights,—the actual pathological condition meant by these terms, and the clinical aspect.

Abscess—phlegmon—synonymous? Few, I think, will agree to this, for in our old college days we learned from our Dunglison, if not earlier from a Webster or a Worcester, that an abscess is (according to the first) "a collection of pus in a cavity, the result of a morbid process;" and the same authority defines phlegmon as an "inflammation of the areolar texture accompanied with redness, circumscribed swelling, increased heat and pain which is at first tensive and lancinating, but afterwards pulsating and heavy. *It is apt to terminate in suppuration.*"

So much for the original theoretical basis of our medical knowledge. Occasionally these early obtained theoretical ideas,

when we, as practical physicians, come in contact with actual diseased humanity, become somewhat changed, restricted or broadened,—we say modified by the superior knowledge culled from practical experience. This modification usually benefits both the practitioner and patient.

Is this one of those progressive clinical modifications? Some so consider it. Dr. Chas. H. Knight says, “I do not think a distinction important.” Dr. Patterson, reasoning from a bacteriological basis that “each is a local infection,” concludes there is “no necessity for separating them.”

At first clinical experience led the writer to look upon the pathological states as virtually the same; but subsequently, more extended observation constrains him to agree with Dr. Douglas, who, to the question of “should peritonsillar phlegmon be distinguished from peritonsillar abscess,” answers “most decidedly;” and Drs. Baker and Roe believe them distinguishable.

Really an abscess, in this locality as elsewhere, stated in a nutshell, is the untoward result of a phlegmon not checked by some remedial measures. Admitting the differentiability of these two conditions, is it desirable or beneficial to make such distinction?

For two reasons, we think it is. First, as Dr. Baker suggests, “for the sake of the different treatment to be employed.” If the pathological condition presented be a phlegmon, we should administer antiphlogistic treatment, both local and internal, such as cold, wet packs, antiphlogistine, etc., externally, and internally hepar., bell., or merc. sol. or bin. If it be an abscess, nothing short of free incision seems adequate, especially in this locality, because the lymphatics guarding it are so deeply located it seems very hazardous to lose any time in endeavoring to

hasten natural absorption by internal medication. The second reason is for the prognosis.

Of late years we have noticed a considerably increasing number of peritonsillar phlegmons, or, as they are usually spoken of, quinsy, which do not discharge. If the diagnosis of abscess is told the patient, and it neither discharges spontaneously, nor on incision, the patient may think, either that the doctor has done wonders in aborting the formation of pus, or that he was over-anxious, an alarmist, and made an incorrect diagnosis. Recently, it seems that the latter opinion is more frequently held than formerly. It should be borne in mind that the phlegmons are of frequent recurrence, therefore the patient, knowing his physical habit, is as able as the physician (if not more so) to make a correct prognosis. Furthermore, they frequently occur in the better educated classes, predisposing causes often being either the gouty or rheumatic diathesis or nervous debility from hard mental overwork or social dissipation; therefore in persons who are very critical of the doctor.

Is it not, then, advisable to guard our prognosis by a more strict attention to our nomenclature, and, if pus be not present or imminent, call it a phlegmon, while, if desirable, mention may be made that abscess is possible? Then, there is considerable self-satisfaction in precision in diagnosis and prognosis, as well as in everything else we do.

A. W. P.

NECROSIS OF THE BONY LABYRINTH AND THE ENTIRE PETROUS PORTION OF THE TEMPORAL BONE.*

S. CITELLI,

Turin.

CASES of necrosis of the labyrinth are no longer a rarity, neither are they met with very frequently in practice. In 1886 Bezold published an important monograph on the subject based on five cases of personal observation and a study of 46 cases in literature. In 1894, 65 cases were reported; from that time to the present a very few cases have been published, among which are three reported by Lannois, Friedenwald (one case), Rueda (one), and two observed in our clinic, which will be published by Dr. Calamida.

From the literature on the subject and the work by Bezold we are able to deduce the following:

(1) Necrosis of the labyrinth is seen principally in the young, and especially during the first ten years of life, nearly always following a chronic suppuration of the middle ear, which was established spontaneously or followed some exanthemata.

(2) In more than one-third of the cases it is limited to the cochlea, a fact explained by the embryological development, and in more than eighty-three per cent of the cases we have a paralysis of the facial nerve. (In the statistics of Bec, paralysis of the facial figures in sixty-five per cent of the cases.)

(3) Patients suffering from necrosis of the labyrinth in

*Translated by Virgil C. Piatti, from *Archivio Italiano di Otologia, Rinologia e Laringologia*, February 5, 1903.

most cases survive the elimination of the sequestrum and in a few cases the purulent secretion ceases entirely; in the forty-six cases reported by Bezold only seven died, due to the continuation of the purulent process to the meninges and brain.

The case which I have been able to study and observe until her death, is very interesting because of its rapidity, but more especially for the peculiar extension of the diseased process, the necrosis affecting not only the labyrinth but the entire petrous portion of the temporal bone.

The cases of such extensive necrosis of the temporal from otitis media purulenta are very rare; in the literature on the subject I have been able to find one case reported by Wilde and one by Voltolini of necrosis; of almost the entire portion of the petrous portion of the bone. One case reported by Gottstein necrosis and exfoliation of the entire mastoid and portion of the external table of petrous portion of the temporal bone in a child of one year and a half which lived and was cured.

Our patient, a female aged thirty-four, father died of old age, mother living and well, has suffered the exanthemata of childhood, and two years before the present trouble suffered a left sided-pleurisy from which she entirely recovered. There was nothing else of importance in the family history.

Has never suffered any auricular disturbance until January, 1901, when she noticed a buzzing in the left ear, and a sensation of fullness; this was followed by violent lancinating pains and otorrhœa, at first rather slight and finally becoming copious. It is to be noted that with the advent of the discharge there was no amelioration of the pain.

In this condition she presented herself at the clinic and was examined by me.

Objective symptoms, left auditory canal full of pus; after clearing this out with an antiseptic wash we note that the membrana tympani is almost entirely destroyed, the pars flaccida alone remaining and from which the head of malleus is detached and the handle of this bone is entirely destroyed.

The wall of the bony labyrinth clearly visible and nearly all of postero-superior segment a dirty white color, and in the anterior superior segment another small point of the same color, all the rest of parietes being covered with a red soft granulating mucus. Touching those points which are dirty white in color the bone is found to be entirely denuded.

As a simple coincidence I would state that there was a small papilloma implanted on the free edge of the left vocal cord, which explained the hoarseness from which she suffered. No evidence of pulmonary tuberculosis.

The patient complains of vertigo, pains which prevent sleep, deafness of affected side, for about fifteen days, vomiting in the morning, fever at night with chilliness.

Examined functionally we find total abolition of the acoustic function for all the diapason series—Gradenigo. Rinné éclatant negative (apparently). Cannot stand on one foot with eyes open nor on the tips of both feet. By the goniometer, with eyes open, acts like an individual in normal health.

A diagnosis was made of chronic purulent otitis media with necrosis of the labyrinth, antiseptic washes prescribed to be used frequently, and patient directed to examine all pus carefully for pieces of bone.

From this time on the patient came to clinic nearly every day, but the discharge is always copious, pains (especially at night) insupportable, and functional disturbances and vomiting unchanged. There were then prescribed instillations of laudanum and cocain in an endeavor to calm pain so that patient could get some rest at night.

During July patient did not return to clinic, but in August all symptoms as before and general condition of patient worse. September 14, a small sequestrum about one and one half centimeter in length was thrown off through the auditory canal, but could not be preserved as it was so fragile that it was reduced to fragments by the mere touch of the forceps. Four days after, a tumefaction and redness of the mastoid region noticed. September 21, patient com-

plained that she could not close her left eye and that her mouth was pulled to the right. September 29, returned to clinic in a very grave condition.

Status Præsens—Constant fever, tongue thickly coated and foul breath.

Tumefaction of mastoid region, pus from auditory canal foul and abundant, left facial paralysis, sight of left eye almost entirely destroyed, pupils dilated and react slightly to light and accommodation. Mastication and deglutition painful. From the time that she was received in clinic there have been two treatments daily, notwithstanding which all symptoms persist and fever remains at about 39° C.

October 5, slight fluctuation over left mastoid region and the skin is tense and congested. A slight retro-auricular incision was made, from which two teaspoonfuls of creamy fetid pus flowed,—a more radical operation was deferred until such time as the patient would be in better condition,—the mastoid is entirely denuded and there is a fistula connecting with the postero-superior wall of auditory canal; the walls were curetted and the cavity stuffed with gauze.

Slight amelioration from operation. October 14, patient had a fainting spell and slight sense of rigidity in nape of neck. On the following day was operated again, the incision lengthened, giving better access to the fistula going to the auditory canal and which is in communication with the antrum. The cavities were well cleansed, all granulations, etc., removed, also some small sequestra of bone from A. C. and the bony labyrinth. Almost the entire base of the petrous portion of the bone seemed necrotic, but, as the extent of the disease could not be delineated and there being no sequestra to remove, it was deemed best not to open the cranial cavity at this time. Patient was given narcotics after operation and an injection of caffein. Day following patient is dull and stupid and does not respond when addressed: fever (38°) discharge copious and fetid. Five days after the second operation evening temperature 39.7°, and notwithstanding the administration of antipyretics continued so for five days longer. The rigidity of the neck is

more pronounced, and patient gradually becomes comatose, interrupted by convulsions accentuated on the left side, this condition continuing until death supervened several hours later.

Autopsy made by Professor Foà. Necrosis of entire petrous portion of left temporal bone, the superior surface of which was covered with granulations and gelatinous pus of a tubercular aspect. Large extradural abscess corresponding with the inferior surface of the temporo-sphenoidal lobe with ulceration of the dura about two centimeters in area. Suppurative meningo-encephalitis limited to the temporal lobe and the internal side of left occipital lobe. Cerebral lesions limited to the cortex. Nothing in the encephalon or in the ventricles.

Lungs and pleura, left side, present adhesions, and right side there are some small tubercular nodules, partly calcified, and a small cavity at the apex.

The important facts presented are two, the great extent and the rapidity of the necrosis. We have stated that in nearly all cases of necrosis of the petrous portion of the temporal bone it is generally confined to isolated portions of the labyrinth. Besides we know that necrosis of the labyrinth generally follows in the wake of a chronic otorrhœa of more than one year's duration. Bezold in fact only reports two cases where the otorrhœa, necrosis and exfoliation ran their course in less than one year (Lucæ 8 months and Christinnick 12 months). Our case presented herself at the clinic (a little less than four months having elapsed since the beginning of the otorrhœa) with an endoscopic picture of necrosis of labyrinth and with functional symptoms of necrosis of the entire labyrinth (complete deafness, vertigo, and vomiting).

The sequestrum was not discharged, the necrosis included the entire petrous portion of the bone, beside extending to the posterior wall of the bony portion of the auditory canal from which was formed the retro-auricular abscess.

As to the ætiology we feel quite certain that the necrotic process was probably caused by a mixed tubercular and

pyogenic infection. (I was unable to make an examination of the granulations which covered the pleura and which macroscopically were judged tubercular, owing to the fact that I was absent at the time they were removed; in the pus, which I examined repeatedly, I could not find bacilli of Koch.)

The other facts to be noted are the rather advanced age of the patient (thirty four years) and the fatal result, both of which are not very frequently observed in necrosis of the labyrinth.

In this case death was not due to the propagation of the diseased process by way of the porus acusticus internus, as is generally the case (Bezold, loc. cit.), but by way of the pia mater across the superior surface of the petrous bone and the dura mater over the same.

The vomiting that persisted to the end, due in the beginning to phenomena of the labyrinth, toward the end when the labyrinth was destroyed must have been provoked by the continual deglutition of an abundance of fetid pus, which flowed from the Eustachian tube.

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HYPERTENSION OF THE EYE REDUCED WITH HYOSCYAMIN.

FRANK DeW. BATES, M. D.

Hamilton, Ont.

WHETHER the assertion in the editorial of this JOURNAL for last November that scopolamin is practically hyoscyamin be true or not, the effect of the two drugs upon the eye, so far as tension is concerned, is the same.

I first made this discovery with regard to hyoscyamin some twelve years ago, in 1891, when a case of iritis came into my hands, in which atropin had been used for six weeks with the result of setting up glaucomatous symptoms.

The attending oculist wanted to operate upon the eye, but the patient would not submit and I was called in. I changed the mydriatic to hyoscyamin, and the tension was immediately reduced.

Since then I have had several opportunities of testing this in similar cases, and have met with the same result each time. I reported the above case at a meeting of the American Homœopathic Ophthalmological, Otological and Laryngological Society, some four or five years ago.

I have never tried hyoscyamin in a case of true glaucoma; but it might be worth while for someone to try either it or scopolamin in that disease, as they may prove to have more effect in reducing tension than has eserin.

34 N. James Street.

CLINICAL CASES.

DAVID A. STRICKLER, M. D.

Denver, Col.

THE following cases are presented as typical of classes met by the oculist, not because there is anything new in any of them, but with the hope that a study of the types may be of benefit alike to general physician and specialist.

Case 1. W. H. B., æt. forty-three, came with a history of severe sick-headaches, coming about once in two weeks, so intense that he had to give up everything and go to bed for from twenty-four to forty-eight hours. He had suffered from them for years, but at no time had he connected them with the use of his eyes. When I suggested the eyes as a probable cause, he was positive they could not be, as he could see as well as anyone and never felt any inconvenience from their use. Besides he was positive that they came from indiscretions in diet: that in every instance he could trace them to some definite article of diet, and the headache was relieved only when the offending article was removed by emesis. I induced him to have the eyes examined and found a myopic astigmia in both eyes, for which I prescribed the correcting lenses. Five years later he appeared for another examination with a statement that he had not had a headache since he first put on the glasses.

Case 2. Mrs. F. L. G., æt. thirty-one, came with a history of intense headaches for many years. Had to give up school when a girl on account of headaches. Pains intense, throbbing in the temples and back of the head; at times con-

fined to the left supra-orbital region, worse on motion. This lady was wearing glasses when she came, and had been under treatment for years by two of our best homœopathic prescribers, one in Chicago and one in Denver, but failed to get relief. Her ametropia—O. D., $+0.75^s \text{C} + 0.50^c \text{ ax. } 105^\circ$; O. S., $+0.25^s \text{C} + 0.50^c \text{ ax. } 75^\circ$ —was corrected under full mydriasis, when considerable right hyper-esophoria showed itself and for which partial correcting prisms were prescribed, all with little or no relief to the intense headaches.

A more careful inquiry into the exact nature of the headache for the purpose of a homœopathic prescription brought out the following symptoms: "Intense headache in the left supra-orbital region, worse on motion; flushed face, almost purple at times, eyes injected, relieved from nose-bleed." Melilotus 3x was prescribed with immediate and permanent relief of headache, pain in eyes and photophobia which had been annoying symptoms. Subsequent examination of the muscles showed no change in muscular imbalance.

Case 3. Mrs. O. F., æt. thirty, for eight years was subject to severe headaches, mainly in one or the other eye, at times attended by sick stomach; they are irregular in time of appearance, but she rarely escapes for two weeks, and they are increasing in frequency and severity. They last from twenty-four to forty-eight hours, with no let up at night. Otherwise general health good. She came wearing a -0.25^s . Under homatropin (she did not have time to permit the use of atropin) the vision was: O. D. 20/200; with $+2.25 \text{C} + 0.50 \text{ ax. } 90^\circ$, V. = 20/20. O. S. 20/200; with $+2.25 \text{C} + 0.38 \text{ ax. } 135^\circ$ V. = 20/20. With both, V. = 20/15, with orthophoria at 15 feet; exophoria 9° in accommodation. O. D. $+1.87 \text{C} + 0.50 \text{ ax. } 90^\circ$, O. S. $+1.87 \text{C} + 0.38 \text{ ax. } 135^\circ$ were prescribed and natr. mur. 6x given with partial relief for a time.

Seven months later she appeared with history of headaches at least once a week, and sometimes oftener, mainly in one or the other eyeball, rarely both at the same time. With severe headaches, ravenous appetite, with temporary relief from eating, but worse afterwards. Under atropin for

sixty-two hours her refraction was found to be O. D. 15/200. With $+2.75\bigcirc + 0.62$ ax. 90° V.=28/20. O. S. 15/200. With $+2.75\bigcirc + 0.38$ ax. 120° V.= 28/20, for which O. D. $+2.50\bigcirc + 0.62$ ax. 90° , O. S. $+2.50\bigcirc + 0.38$ ax. 120° , were prescribed and a note was sent to her physicians to study lithium carb. and ignatia for her, and also to go carefully into the question of diet; that I thought a uric-acid diathesis the most likely cause of the headache.

Her subsequent report was "no relief" from the glasses, but some old-school physician had given her some medicine for the stomach and liver and the headaches had disappeared. She had discarded her glasses and her husband refused to pay for my services.

These three cases, differing so widely in results, merit some attention at our hands.

It is no longer news to the general practitioner that eye-strain is a frequent source of headache and of other neuroses, that it may be a source of innumerable weaknesses in parts remote as well as in close proximity; but the practical question with him, and I am sorry to say the one often difficult for the oculist to answer without a full examination under a cycloplegic, is "How am I to know that my patient suffers from eye-strain?" Of course there is a large class of patients who suffer from asthenopia, photophobia, watering of the eyes, blurring of vision, running together of print, pain in the eyes on slightest or extended use, headaches traceable directly to the use of the eyes; some or all of which may be present, in which the patient himself can trace the relationship from cause to effect. These form a large percentage of the cases who find their way, unaided, to the oculist. When young in general medicine chronic sick-headaches were the bane of my practice, as I presume they were of many of my confrères; I do not know that I have ever been more elated over anything in medicine than I was to find the immense relief afforded so many of these sufferers by correcting their errors of refraction. After years of experience in correcting the errors I find my chagrin at failure to relieve when asthenopic conditions are

marked almost equal to my former elation at success. It is not of these I would speak at this time.

In case 1 we had a patient who was positive that his eyes had nothing to do with his trouble—he “could see as well as anyone.” He thought he could; he could use his eyes all he wished and never had any trouble with them. He was so positive that they were all right that I suggested an examination free, simply to learn whether a man so positive might not, after all, be mistaken. When he called five years later, without a headache in the meantime, I asked him, “Do the eyes ever produce headache?” He said, “I was a fool once.”

It seems to me the lesson to be learned from this case is that in chronic headaches which are not relieved by general and local treatment, the eyes should be carefully examined for eye-strain, even though there be no asthenopic or local symptoms calling attention to the eyes as the source of trouble.

In case 2 we had a patient referred by a careful homœopathic physician who had her under observation for years, and who before that and during a part of those years came under the treatment of one of the most careful prescribers of our school. Eye-strain sufficient to cause headaches in a large majority of women was found to exist, but its correction did not relieve either the eyes or the head. A study of the headache of *melilotus* will show a perfect picture of her condition, and its use was followed by immediate and permanent relief. The lesson here is an old and familiar one, but one that we too often forget in our times of greatest need. It is the old and oft-repeated experience in the practice of *Similia*. That my predecessors, both of whom are better prescribers than I, failed, was due to their not finding the *simillimum*, I am sure. I fear too many of us are too ready to limit in thought the power of the homœopathic drug by our imperfect knowledge of its application, and that our failure to reach the desired results is too often due to our failure in finding the *simillimum*.

Case 3 is reported fully because in it the symptoms are

just such as one would expect to find from eye-strain and because there was a marked degree of eye-strain present, but its correction gave no relief to the pain in the eyes, nor the headache. The symptom that "with the severe headaches ravenous appetite, with temporary relief from eating, but worse afterwards," was elicited only at her last call. I did not prescribe for this case, but believe that, had she returned to her family physician for treatment, she would have been relieved either through the homœopathic remedy or through diet. Her last report was sufficient to show that the digestive tract was a contributing factor. That she will not have permanent relief without glasses must be evident to anyone familiar with eye records.

The lesson in this case is that in a given case with marked eye-strain one should be guarded in promising too much from its correction ; other organs or the general condition may be at fault.

Over and above the specific lessons which each of these cases would seem to teach, it appears to me there is one broad and general lesson we should learn from them. It is the lesson of mutual interdependence of one organ upon another in neuroses, as well as in definite pathological conditions, coupled with a like interdependence of the general physician and the specialist who, like the organs of the body, must work in harmony and unison to produce a healthy and efficient profession.

705 Fourteenth Street.

PROGRESS IN OTOLOGY IN FIFTY YEARS.*

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St. Louis.

I CAN without fear of offense draw a dividing line between the knowledge of the otologist of 1853 and that of us of 1903, enabling some of you, no doubt, to appreciate the fact that much of our vast present-day attainment was the possession of the otologist of fifty years ago. William R. Wilde's "Practical Observations on Aural Surgery and the Nature and Treatment of Diseases of the Ear," 1853, is my chief authority for the otology of fifty years ago.

While I do not minimize the importance of the scientific knowledge which we possess of the ear and its diseases, I make bold to say that the most important discoveries which we have made since 1853 have been in the elaboration of the work of the surgeons and not through individual discoveries of otologists or through disassociated achievements. Our progress is largely embraced in the treatment of suppurative conditions in which the elements of pathology, histology, bacteriology, instrumentation, and operative technique have part, all of which are more connected with surgical procedure than general medical therapy.

In pathology we have the basis of the whole scientific fabric; in his application of it to causes and effects the otologist has been no laggard, but has caught the spirit of

*Abstract of paper read before the eighth annual meeting of the Western Ophthalmologic and Oto-Laryngologic Association, Indianapolis, April 9 to 11, 1903.

all medical science. Without a correct knowledge of pathology we are in the dark and incapable of intelligently addressing our therapeutic resources.

While the aurist of the early half of the last century knew the anatomy of the ear as minutely as we do, he did not appreciate the intimate relationship and bearing of one organ upon another, nor the ætiologic influence of the one as a factor in the production of diseases in its neighbor. For instance, he was not cognizant of the effect of nasal upon aural parts as influential in the production and continuance of disease in the post-nasal space, and its extension through the Eustachian tube into the middle ear.

We made a long step when we arrived at an appreciation of the necessity for free nasal passages and a healthy mucous membrane as indispensable to the cure of certain conditions within the tympanum. To one man do we owe the one great discovery in otology, the only discovery of unquestionable and consistent value made by otologists during the fifty years past. Need I mention Wilhelm Meyer? I confine myself to contributions of those of our cult, and restrict their offerings to those that were not built upon the foundations of their predecessors. To Lister the surgeon do we owe the major part of our progress in scientific otology from the time I have elected to consider, for within this great epoch has been developed the perfection of all surgical procedure to which otology owes most of the commanding basis it now occupies. Wilde and his contemporaries knew the importance of antiphlogistics in acute congestion adjacent to the middle ear, and they fully appreciated the value of drainage and cleanliness, as demonstrated in "Wilde's Incision," but without antiseptics they had not learned with what impunity the human body may be penetrated, and how thoroughly the mastoid may be drained. Our appreciation of the tremendous importance of pus elimination has come to us through the teachings of Lister.

In instrumentation, diagnostic and operative, we have first in importance the laryngoscopic head mirror, through

which our exploration of the ear is more complete. Our tests and discernments of ear diseases are far more comprehensive and accurate, based as they are upon increased knowledge of histology, bacteriology, and pathology. The use of the tuning fork, Galton's whistle, Siegle's speculum, and the otoscope, have all perfected us in diagnosis, while the impunity of surgery has naturally added boldness and dexterity. In this connection it is meet that I should refer to the Politzer bag, that most valuable adjunct to the aurist's armamentarium in diagnosis and treatment of congestive conditions in the Eustachian tubes and middle ear, notwithstanding its inferiority in importance to Meyer's elucidation of adenoids and the still greater revelation of antisepsis. In estimating the value of Politzerization, it were well to remember that the catheter and Valsalva's method antedated it many years ago, and that Politzer's discovery *does not* involve a demonstration of the improvement through inflation of the middle ear in Eustachian-tube catarrh. That fact was well known by the aurists of the time of Wilde and before, and Politzer simply demonstrated a new method built upon the old, by which air may be forced through the Eustachian tubes into the middle-ear cavity. It was indeed an improvement and a more scientific method than Valsalva's, but when we consider that all this was well known, and the ease with which the ear may be inflated by means of these several methods, the mystery is not that Politzer discovered inflation by a rubber bag, but how it happened that it was not discovered by some of his predecessors. In the diagnosis and treatment of tubal catarrh and in certain nasal obstructions, Politzer's bag is indispensable, but in the large majority of cases the catheter is far more effective and scientific. Catheterization addresses a direct and a concentrated stream of air, vapor, or fluid, through the tube into the tympanum, while the bag projects a distributed and rarefied current of air or vapor only. The modifications of Politzer's method are much more satisfactory than the simple bag for office uses, though the latter is a valuable adjunct at the bedside.

In summing up the advances made in otology during the past fifty years I conclude that they almost entirely hinge upon antiseptics, pathology, bacteriology, histology, and operative technique. Out of these have grown perfection in diagnosis and a clearer realization of the necessity for drainage and cleanliness in suppurative conditions, and an improved operative technique, together with a skill and boldness in draining bone cavities containing pus. Pathology and its collateral branches add to our knowledge of the cause and course of diseases and are used as methods for the arrest and eradication of offending matter. Out of the appreciation of ætiology has come a more perfect perception, and these have developed accuracy of diagnosis and skill in operation until at last we have, full fledged, a specialty recognized as one of dignity, through skill and achievements.

I would that I might dwell longer upon the list of inventions and discoveries by otologists, but however we may have arrived at our improvements and advances, they are admitted and are permanent. Our least accomplishment seems to have been in the treatment of chronic deafness without suppuration; I particularly refer to that intractable malady known as sclerotic deafness. The various operations and instruments designed to improve sclerotic deafness are all of doubtful utility, and those who are treated for this disease are improved just about as much as they were fifty years ago when some aurists poured glycerin into their ears. We have learned to distinguish between catarrhal deafness and a true sclerotic process, but in naming the disease have not named a remedy. Thus it is that this common class of sufferers go on and on until finally, wearied of the ineffectualness of treatments, they become a menace to our material success and a reproach to otologic science. And what has been said of sclerosis can be applied to internal ear diseases. Here again we have added a little to our diagnosis, and named a disease or two without naming a remedy.

On the whole we have done well, considering that it has

been many years less than fifty since this branch of medical science attained the dignity of a distinctive science and evoked a concentrated effort of a large body of workers. Now that all of medicine is upon such a scientific basis and so many are concentrating their efforts upon otologic science entirely, which is recognized as a department of medicine of vast importance, we may expect that in 1953 should someone elect to write an account or résumé of the progress of otology in the interim between now and then, as I have tried to do of the preceding half of the century, he may point to a large list of achievements by otologists, standing distinctly upon their own foundations, and not elaborations of the work of others. Then will he not have to confess that "one great hero fans another's fire."

303 N. Grand Avenue.

SYMPOSIUM.

Should not Peritonsillar Phlegmon be Distinguished from Peritonsillar Abscess? What is Your Experience with These Cases?

GEORGE B. RICE (Boston) : I do not think the term, "peritonsillar phlegmon" a good one. The word phlegmon in this connection is almost obsolete, and I believe rightly so, for the word means literally "to burn," or an inflammatory swelling which may or may not terminate in suppuration. Now, we know that in nine cases out of ten a peritonsillar inflammation terminates in suppuration, and therefore the term peritonsillar abscess seems to be more exact and proper.

E. H. LINNELL (Norwich, Conn.) : I know no practical difference between them.

F. H. BOSWORTH (New York) : I am really at a loss to understand just what the question implies. I have always regarded the peritonsillar abscess as the sequence of the phlegmon. All cases of so-called quinsy, I think, are peritonsillar. The interesting point is to determine just when pus formation sets in; that is decided as a rule by the use of the knife, unless the abscess has so far developed as to present fluctuation or softening, as ascertained by palpation.

CHARLES H. KNIGHT (New York) : We have become so accustomed to speaking of circumtonsillar or peritonsillar abscess that the name will stick, although the condition, as we know it clinically, is doubtless a genuine abscess in every case—that is, a circumscribed collection of pus bounded by a pyogenic membrane. An abscess is a phlegmon, a phlegmon may not be an abscess. Practically I do not think a distinction important. In most cases pus formation takes place between the palatal folds at the upper border of the tonsil and is a true abscess,

according to Foster's definition: "a collection of pus in a cavity formed as the result of suppuration." In this sense it is manifestly improper to speak of "antral abscess," "mastoid abscess," etc., yet we constantly use the latter terms, and we must admit that custom sanctions the usage.

JOHN O. ROE (Rochester): Peritonsillar phlegmon can be distinguished from peritonsillar abscess in many cases, but there are many other cases in which the two processes cannot be differentiated until sufficient time has elapsed for the abscess to form, if it proves to be an abscess, or until resolution has begun to take place in the case of the phlegmon. In my experience, not only does the same disease vary greatly in different persons, but in persons living in different localities and leading different modes of life.

LEIGH Y. BAKER (Washington, D. C.): In my experience, peritonsillar phlegmon *should* be distinguished from peritonsillar abscess, and it usually is so differentiated in my work, if for no other reason than for the application of curative measures. Practically the large majority of these abscesses have passed through a stage of phlegmonous inflammation, or true peritonsillar phlegmon. Still, I believe that we can have one without the other. The simple operative distinction which we make is sufficient to show that a negative, if not a positive, differentiation is made by most operators.

J. M. PATTERSON (Kansas City): Believing that the cause of each is a local infection, usually starting in the supratonsillar notch, I see no necessity for separating them. Prevention is thoroughly to remove at least the upper part of the tonsil, so that no nidus or pocket remains to act as a starting point for another attack. This is best done by the electrocautery, after the method of Dr. Edwin Pyncheon of Chicago. No one procedure in all my nose and throat work has ever brought me more grateful patients, or has been so universally satisfactory.

J. E. MANN (Louisville): During nineteen years of private and hospital practice there has not come under my direct observation a case of "peritonsillar phlegmon."

O. B. DOUGLAS (Concord, N. H.): Most decidedly. Abscess may or may not follow as a sequel of phlegmon. The ounce of prevention is often effective.

PRACTICAL HINTS.

“Chronic serpiginous ulcer” is a better name, says Nettleship, than “ulcus rodens,” as the latter is one of the names for rodent epithelioma.

In Eustachian electrolysis MacDowell has found insulation of the catheter unnecessary, the escaping current (he uses 1 1-2 to 4 ma. of 30 to 40 volts) not seeming to cause the patient any discomfort.

The reflected image of the circular mirror of an ophthalmoscope or skiascope may be used, like Placido’s disk, to reveal irregular curvatures of the cornea.

In the ophthalmoscopic examination for incipient or partial cataract use a strong (6 D.) plus glass in the instrument, held at about its focal distance from the lens.

For detached retina subconjunctival injection, 1 c. c. of 1 1-2 per cent. solution of Pohl’s physiological saline (Merck’s tabloids) is much less painful than sodium chloride and may be used daily. It is not injurious; the fluid rapidly penetrates the globe.

Sinus thrombosis is not a very uncommon complication of subcutaneous injection of paraffin.

Try dionin instillations (1 per cent.) in optic atrophy. This has enlarged the field and increased visual acuity (at least temporarily) in one case of retrobulbar neuritis.

Cerebral abscess, due to ear disease, is to be differentiated from meningitis and sinus thrombosis:

Sinus Thrombosis.

High fever.
Frequent chills.
Rapid pulse.
Mastoid œdema.
Swelling along jugular vein.
Exophthalmos.
Choked disk appears early.
Sinus thrombosis.

Cerebral Abscess.

Low temperature.
No chilly sensations.
Slow pulse.
No swelling over mastoid.
No swelling of vessels of neck.
Not exophthalmos.
Choked disk seldom observed.
Aphasia, cerebellar.
Staggering hemiplegia and hemianæsthesia.

Meningitis.

Rapid onset of disease.
Severe headache.
Sensitive to light and noise.
High temperature.

Quick, irregular pulse.
Strabismus uncommon.
Twitchings, jerkings.
Convulsions.

Cerebral Abscess.

Slow development of symptoms.
Little or no headache.
Apathetic.
Low temperature; may be sub-normal
Slow full pulse.
Strabismus common.
Patient quiet throughout.
Convulsions before death.

Careless use of the Gottstein curette, or of Lowenberg's forceps, may injure the orifice of the Eustachian tube or the vomer.

Two children have died in convulsions six hours after the adenoid operation under cocain. Schmieglow reported a case of death from the curette opening the internal carotid artery, which had been pushed out of position by swollen glands. Would not this have been detected if the curette had been guarded by an accompanying finger, as suggested by Lester in our *Practical Hints*, last issue? Two or three other fatal hæmorrhages from the vault of the pharynx have been reported.

Adenoids can be operated through the nose with the Jarvis polypus snare. There is comparatively little hæmorrhage, nausea, and vomiting, less pain and struggling.

Give internally hepar sulph. 6 for the intense iritic pain, more than would be expected from the appearance of the eye, especially in hypersensitive irritable patients who are sensitive to the cold, or if they have had too much mercury, potassium iodide or iodine.

Instead of ligating small arteries, Deaver of Philadelphia seals them by applying the tips of an artery forceps which has just been heated by holding it against a cautery.

Take the temperature before an adenoid operation; it may foretell the onset of some contra-indicating affection.

Ocular massage has cured scintillating scotoma.

After extirpation of the lachrymal sac employ slight pressure while irrigating the wound, in order to obviate troublesome infiltration of lid and orbit.

Eighteen grains of iodide of potassium a day for nine days has cured acute dacryoadenitis, which rapidly disappeared after stopping the drug.

Potassium iodide may produce all the symptoms of hæmorrhagic glaucoma.

Dionin should be employed when heat is indicated; adrenalin when cold.—MADDOX.

Try pilocarpin for tobacco amblyopia.

If iris prolapse is discovered at first dressing after simple cataract extraction, perform iridectomy at once under cocain.

Give badiaga for exophthalmic goiter with aching pain in the posterior portion of the eyeballs, aggravated by moving them, accompanied with tremulous palpitation of the heart, rapid, irregular pulse, and glandular swellings.

Ipecac in very small doses will relieve phlyctenular ophthalmia with much photophobia, redness, and lachrymation. The cheek bones ache.

Arnica internally and locally hastens absorption of extravasated blood; do not use it locally any stronger than a dram of the tincture to six ounces of water.

For irritable spasm of the accommodation, with nausea, give jaborandi.

Duboisia is the remedy for true weakness or paralysis of the ciliary muscle, associated with hyperæmia of the fundus, and usually with mydriasis. If there be also vertigo with pale face, it is *the* remedy.

Van Fleet has seen [4 per cent.?] “cocain produce ciliary paralysis lasting three days, and in one case has seen cocain produce an ulcer of the cornea which lasted a week.” His results have been as good after operating immature as mature cataracts; he performs simple extraction.

Roosa has abandoned removal of the lens in its capsule, having found the results inferior to those with capsulotomy.

Simple extraction is the ideal method; nearly every New York surgeon performs it now, if he can.

Operate cataract as soon as, or even a little before, it is mature, unless contra-indicated, even if there be good vision in

the other eye; this is to avoid glaucoma, or inflammation of iris, ciliary body, and lens, or the traumatism of extracting the large hard overripe lens.

Suppuration of the flap, after the modern cataract extraction by a careful, skillful operator, is due to something inherent in the patient, and not to the operation.

Valk objects to sawing the cornea open for cataract. He makes the section with three distinct cuts; upward on one side, after making the counterpuncture, and cut the other side as the knife is drawn backward, then turn the knife slowly on its axis and cut out so that the section of the cornea will be like the keystone of an arch.

With almost complete circular capsulotomy, discission may be reduced to five or ten per cent.

Avoid needling, if possible, on account of setting up cyclitis, vitreous turbidity, or possibly retinal detachment.

SOCIETIES.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL SOCIETY; Washington, D. C., June 2, 3, and 4, 1902. (Concluded.)

Symposium on Diseases of the Accessory Sinuses, by ROBERT C. MYLES, of New York.

The chief functions of the accessory sinuses are to supply fluid secretion, warm the air passing through the nose, and act as a sounding board. In the majority of cases, empyema of the antrum of Highmore was easily diagnosed, and he valued highly as one of the aids for this purpose the method of transillumination. The passing of the trocar through the middle or inferior meatus would often confirm the diagnosis. Where there were polypi, thick mucus, and colloid material this method would fail. He believed he had been the first to insist upon not employing the radical surgical treatment of antral disease by repeated and severe curettage. Such treatment often aggravated the condition. In frontal sinus cases, the diagnosis was usually made with difficulty, yet injection of normal salt solution often cleared up the diagnosis. The morn-

ing headache was generally significant, and was due to retention of the gases above the thick secretions which flowed over the mouth of the infundibulum on assuming the erect posture, and was gradually relieved by the pressure of the gas forcing the secretion down into the middle meatus. Total obliteration of the sinus yielded brilliant results where the sinuses were small; in other cases part of the anterior wall should be removed and the mucosa curetted, a large opening being made from the sinus to the nose. The diagnosis of ethmoidal disease was usually very plain. A soft silver probe was of great value in ascertaining the condition of the cells. All polypoid tissue should be removed, and also the floors of the sinuses. Disease of the sphenoidal cells was easily diagnosed, and the results of treatment were satisfactory. Complete removal of the posterior end of the middle turbinal would usually demonstrate the point from which pus made its exit. Extensive removal of the anterior wall and repeated excision of the membrane forming over the opening usually cured these cases.

Ethmoidal Cells. EUGENE L. VANSANT, Philadelphia, said that these cells varied greatly in size, number, and shape. Occasionally the roof of the maxillary antrum contains one or more cells. The situation of the ethmoidal cells rendered them particularly liable to involvement by inflammatory processes extending from the nasal passages. Of the new growths found here myxomata were the most common. Catarrhal and suppurative inflammations of these cells most commonly required attention, their existence was frequently unsuspected. Catarrhal inflammation was usually associated with an acute rhinitis, or with influenza. This form of inflammation usually terminated in resolution. Most cases of suppurative ethmoiditis did not come under observation until already chronic. Granulations and polypoid processes not infrequently spring up in the mucous membrane. In most cases the patient complains of more or less constant pain in the forehead or temporal region in addition to the discharge. Drainage was rarely perfect, and the symptoms varied somewhat according to the amount of secretion retained. The prognosis was very uncertain. All intranasal obstructions and nasal polypi must be removed. It was ordinarily best to remove the anterior end of the middle turbinal. If the posterior cells were involved, the entire middle turbinal should be removed. If the cells were found necrotic or filled

with granulations, a thorough curettement should be done, and a light packing inserted to avoid hæmorrhage. Syringing the cells with hot air was also a useful expedient. Hot-water applications over the root of the nose and face added to the patient's comfort.

Sphenoidal Cells, by CORNELIUS G. COAKLEY, New York.

The first reference he had found to this affection was in connection with an autopsy record in 1872, and Schaffer, in 1885, had been the first to detect and treat this condition in the living. Influenza, or severe rhinitis, is most commonly responsible for acute inflammation of these cells. There are usually fever, rigors, and headache, and sometimes pain, referred to the back of the orbit, is the only symptom complained of. Examination of the nasopharynx would usually show a thick, tenacious mucus, but it could not be seen to come from the sinus. In acute cases, the nasal mucous membrane should be kept thoroughly contracted by the frequent use of cocain and adrenalin, and the nose should be irrigated with saline solution having a temperature of about 120° F. If this treatment did not give relief, some more radical measure would be demanded. In the chronic cases, examination of the anterior portion of the nose might not show any pus, but pus would usually be found issuing from the posterior nares. By means of a fairly stiff graduated copper probe he endeavored to enter the sphenoidal sinus. At the depth of 7 cm. the end of the probe would usually reach this sinus, and, on entering the sinus, it could be pushed one and a half centimeters further. A cannula was then passed into the cavity and the latter irrigated with warm sterile normal saline solution. If the fluid running out were pus-laden the diagnosis was complete. With a Bryan's gouge and curette the anterior wall below the ostium was broken down. Frequently the removal of a part or all of the middle turbinate was required before catheterization and irrigation could be accomplished.

Antrum of Highmore.—F. C. COBB of Boston divides cases of antral disease as follows: (1) Empyema secondary to frontal or ethmoidal disease; (2) empyema due to decayed teeth; (3) empyema due to foreign bodies, such as rubber injected by dentists, or to eruption of teeth in or about the antrum; (4) empyema due to obstruction by new growths or polypi;

(5) suppuration resulting from tumors; and (6) empyema due to syphilis, and resulting in necrosis generally of some portion of the antral wall. The apparent absence of teeth did not eliminate antral disease arising from diseased roots left behind beneath the gum, and often overlooked. Syphilitic empyema was usually diagnosed by the odor and softening of the bone and its appearance in the discharge. Antral disease was often confounded with dentigerous cysts; the walls of such cysts are bony and offer the same resistance as those of the antrum. If, on tapping and washing out the antrum, a flow of pus occurred within an hour or two, one might be sure that it came from some source outside of the antrum. The operation of Lothrop, throwing open the antrum into the nasal cavity, was probably the best of this class of operations. Better still was the making of a wide opening into the canine fossa, leaving a flap which may be stitched up afterward, and then making an opening so as to secure drainage through the nose. In the latter a wick should be placed.

Diagnosis and Treatment of Frontal Sinus Disease, by LEWIS A. COFFIN, New York.

In well-marked cases there would be persistent frontal headache, with tenderness over the orbital region, and examination would show the nasal mucous membrane swollen and boggy, with pus probably oozing from the middle meatus. Transillumination would assist in the diagnosis. The chronic cases are not so easily recognized; in many cases an exploratory operation is necessary and justifiable to establish the diagnosis. By the use of a specially devised trephine, a bone flap can be readily raised. A primary union occurs after this operation, and no deformity results. Where disease is found drainage should be established by one of several methods. He favored the drawing down of a small rubber tube through the fronto-nasal duct. The closed method was followed by many relapses. For exploratory purposes the opening should be made as near as possible to the median line. The exploratory openings should be situated just over the inner canthus of the eye, and, if necessary, the opening should be enlarged at the expense of the inferior wall. The closed method should be used only in cases in which there is obstruction of the fronto-nasal duct, which can be easily removed. There was no occasion for establishing drainage through the nose.

The Technique of Frontal Sinus Operations; Report of Three Cases Without Nasal Drainage. H. HOLBROOK CURTIS of New York read an abstract, reported the cases, and commented briefly upon them. He exhibited a dressing that he had found exceedingly useful in packing these sinuses, *i. e.*, zephyr wool, deprived of its fat so as to make it absorbent. Dr. Curtis also exhibited an electric sinus lamp and a cheek retractor, which he highly recommended. He particularly dwelt upon the necessity of obliteration of the sinus, and said that the fear of a deforming cicatrix was the bugbear of sinus operations. He considered that an operator should understand plastic surgery, do bold work, and rely upon paraffin and his knife to obliterate the depression and the scar.

Discussion.

JOHN O. ROE, of Rochester, presented a series of skulls showing the wide variations in the sinuses, thus emphasizing the necessity of modifying the method of treatment to suit the individual case. Not only were there marked variations in the location, size, and direction, but in the presence of septa and in their number. In some cases there was almost no frontal sinus, showing the danger of using a drill in opening the sinus which, under such circumstances, would pass through and injure the meninges. He had devised a curved drill, run by an electric motor, by means of which it was easy to enlarge the natural channel from the frontal sinus into the nose. The end of the drill was protected on one side by a shield, so as to enlarge but one side of the passage and thereby avoid a subsequent closure of the passage.

JAMES F. McCaw, of Watertown, N. Y., spoke of the case of a lady who had had all her teeth extracted eighteen years before coming under observation. Because of a chronic discharge and the presence of roughened bone, an incision was made along the alveolar process, and he was surprised on coming down upon a tooth lying in a cavity of the alveolar process and parallel to it. The tooth was removed and the cavity curetted, and since then there has been no trouble.

THOMAS J. HARRIS, of New York, said that in his hands transillumination had proved of very little value in connection with the frontal sinus. In many cases in which pus had been found at operation there had been no darkening at all on

transillumination, and, in other instances, when there was darkening, little or no pus had been found. He agreed with Dr. Coffin, that in each case one must decide whether the open or closed operation should be selected. He firmly believed that in cases in which it was not possible to find marked disease of the ethmoidal cells, the quickest and most satisfactory results would be attained by doing the open operation, as described by Dr. Coffin. This operation could be done thoroughly and yet leave practically no deformity.

SARGENT F. SNOW, of Syracuse, said a large majority of these frontal-sinus cases could get well with better drainage into the nasal passages, not that he recommended the internal operation exclusively in all cases. Quite recently he had discovered that a number of these chronic cases had an underlying syphilitic taint, and that a thorough course solved the problem. Investigation along this line is replete with surprises.

R. C. MYLES said that while small frontal sinuses did well under packing, large sinuses would require packing for an indefinite period, and would fill up with granulations very slowly. Some people could be kept very comfortable by having a permanent opening in the antrum.

C. G. COAKLEY said that he had found the periosteum so much diseased in many cases that he doubted if gentle curettage would suffice. Many patients who had suffered for a long time from antrum disease were greatly improved by a change of air. He had tried the X-ray in cases of disease of the accessory sinuses, but only in one instance had he derived any material aid from this source except for the determination of the presence and size of a sinus. His rule was to not irrigate except at the close of the operation. The packing was changed as infrequently as possible, because each change of dressing disturbed the granulating process. By operating near the inner angle of the eye the resulting scar would be almost imperceptible.

L. A. COFFIN said he could not see how Dr. Roe's drill could be made to pass down into the fronto-nasal duct. In one case in which there was pain and a shadow of transillumination, although no symptom pointed directly to the nose an angioma was discovered on opening the sinus.

A Study of Corditis Cantorum, or Nodes, with Special Reference to Etiology and Treatment, by FRANK E. MILLER, of New York.

This paper was illustrated by lantern slides and by the presentation of several patients, together with a demonstration of the exercises employed in carrying out the treatment.

Primary Epithelioma of the Uvula and Soft Palate, and Treatment with the Roentgen Ray, by JAMES F. McCaw, of Watertown, N. Y.

Report of case. A screen of block tin, with a cylinder of the same material, served to direct the X-ray upon the desired part. The diseased surface had healed very satisfactorily under the treatment, the chief feature of the healing process being the comparative freedom from cicatricial tissue, and slight degree of contraction.

C. G. COAKLEY said that he had used the X-ray in a case of epithelioma of the superior maxilla, supposed to be of about three weeks' duration. The man refused surgical operation, and was treated by the X-ray for a week by Dr. William James Morton, with some improvement. The patient then went away for a short time on business, and on his return the disease was found to have advanced very considerably.

OTTO J. STEIN, of Chicago, referred to a case of leukoplakia of the soft palate and mouth that he had treated for about three months by the usual method without benefit. Last December the X-ray treatment of the case had been begun by Dr. Pusey, and after two months he had reported the case as a failure. After another period of two months the result was still negative. In Dr. McCaw's case it seemed difficult to determine how much of the good result was due to the surgical measures and how much to the X-ray.

Dr. McCaw said he believed most of the good results that would be obtained from the X-ray in this class of cases would be after excision of the growth. The result would also vary somewhat, depending upon whether a "hard" or a "soft" X-ray tube were used.

Report of a Case of Laryngeal Papilloma in a Child, with Remarks, by C. DUNBAR ROY, of Atlanta, Ga.

He had used the method of spraying the larynx with alcohol, as recommended by Dr. Delavan, and with good results

in some instances. Various methods of treatment were discussed by the author. He advised that the children should be kept under observation and the milder methods given a fair trial before resorting to surgical intervention. In adults, especially if there were interference with the breathing, the endolaryngeal method might be tried. In children, prolonged tracheotomy might be required. Laryngotomy should be done only when all other methods had failed.

WENDELL C. PHILLIPS, of New York, insisted upon the great care necessary in making the diagnosis of what seemed to be benign neoplasms of the larynx, because many of these proved to be malignant. In one such case occurring in his own practice, the growth proved to be an epithelioma in a late stage. Almost anyone observing this growth would have declared it to be a papilloma, yet microscopical examination showed its true nature.

THOMAS J. HARRIS said he wished to emphasize the value, in prolonged papillomatous formations, of opening the trachea. A case was recalled in which the growths had been removed repeatedly by Dr. Nichols endolaryngeally, and in which alcohol had also been used unsuccessfully. Prolonged tracheotomy was then resorted to in order to give the part a prolonged rest. This succeeded admirably.

C. G. COAKLEY spoke of the similarity in structure of so-called papillomata and syphilitic growths. He was in favor of removing the papillomata in both children and adults, as soon as possible. Where the base was broad, they were, of course, difficult of removal. It was his habit afterward to make use of alcohol in order to postpone recurrence. Where the attachment was small one removal would often suffice.

W. B. SHIELDS, of St. Louis, referred to the case of a physician of seventy years, upon whom he had operated twice, supposing the growth to be a papilloma from its gross appearance. Microscopical examination showed it to be a sarcoma.

DR. ROY, in closing, said that he was opposed to the method of Coakley and Phillips of removing a portion of the growth for examination, because this afforded an excellent opportunity for auto-intoxication, and for the change of a benign into a malignant neoplasm. He was not in favor of removing a

growth in the larynx as soon as found; it was better, in his opinion, to watch it carefully and test the effect of various medicinal applications.

Abductor Paralysis of the Larynx.—D. J. GIBB WISHART, of Toronto, Ont., reported a case of primary abductor paralysis occurring in a person apparently suffering from tabes dorsalis, and giving a history of syphilis. The cricoarytenoid articulation in this case did not seem to be responsible for the position of the cords. The patient was tracheotomized, and the tube had been worn for several years with great benefit. Resection of the recurrent laryngeal nerve was justifiable if the disease were steadily progressive. Both iodine and arsenic had been given internally. Dr. Wishart said that he had seen a second case last winter, with a history of œsophageal stricture in the practice of Dr. H. D. Bruce. The patient refused operation and remained under observation only a few days.

Report of a Case of Epithelioma of Tympanic Cavity and Involving the Mastoid, by W. H. HASKIN, of New York.

Report of a woman of forty-two, first seen in April, 1901, who complained of intense pain in the left ear, radiating over the head and down the neck. There was also an offensive otorrhœa, and a history of a discharge from the ear at intervals for thirty years. A polyp was removed with a snare. Subsequently there had appeared what was thought to be a malignant growth. A complete mastoid operation was done, and pus found in the tip of the mastoid, and disease in the squamous portion. Examination of the tumor indicated that it was not malignant. On June 24, the patient was readmitted, with a swelling below the ear. The sinuses were opened up, and the granulations removed were then reported to be epitheliomatous. When seen on April 15, 1902, there were large secondary growths around the ear.

Drawings of the Venous System of the Neck.—EDWARD B. DENCH, of New York, exhibited two drawings, showing the anatomical relations in a subject recently dissected, of the right and left internal jugular veins. Upon the right side, the internal jugular was of small size and gave off but one branch, the common lingual and facial trunk, throughout its entire extent. Almost the entire return circulation from the head and

face was carried on through the left side. The external jugular and anterior jugular were very large, as were also the lingual and facial veins. The thyroid and laryngeal branches were in like manner exceedingly well developed. Almost all of the return current from the head and face passed through the superficial and deep vessels of the left side. The drawings were of interest from the fact that the otologist is frequently called upon to excise the internal jugular vein for thrombosis of the lateral sinus. With a distribution of the vessels, such as was shown in the plates exhibited, ligation upon the left side would have been attended with considerable difficulty, and would have only been efficacious had all of the collateral branches of the vein been secured. The plate was presented in order to bring to the attention of the Society the very marked anomalies which might exist in the venous circulation in this region.

Specimen of Tubercular Larynx.—THOMAS H. FARRELL, of Utica, presented a tubercular larynx, obtained post-mortem from a case that he had observed at intervals for five years. The ulceration was found to encircle the larynx, with the exception of a small strip on the anterior surface of the body of the cricoid. The specimen was interesting because, in spite of the long period of infection, the posterior commissure was not involved, and the appearance bore considerable resemblance to syphilis.

Outfit for Mastoid Cases.—WENDELL C. PHILLIPS, of New York, said that about two months ago, at the suggestion of Dr. McKernon, of New York, an outfit had been prepared by Van Horn & Co., of New York, for use in mastoid cases. This, as modified by himself, was exhibited to the Society.

Pus Examination in Middle-Ear Suppuration, by W. C. PHILLIPS.

He said that modern practice favored the routine bacteriological examination of all cases of suppuration of the middle ear, this examination to be made immediately after paracentesis, so as to eliminate organisms subsequently introduced from without. The micro-organisms found their way into the middle ear through the inflamed Eustachian tube. Some of the most virulent of these organisms were frequently found in the Eu-

stachian tube, and even as far as the antrum, without any attendant morbid process. It had been demonstrated that they might even be found in the circulation without giving rise to pyæmia or septicæmia. From these facts it was evident that other factors, such as alterations in the resisting power of the patient and in the nature of the pabulum on which they live must be necessary to excite a morbid process. Several varieties were apt to be found in the same specimen, and, hence, it was the rule for the bacteriologist to state which organism predominated. Some of the organisms found in the pus from middle-ear disease are: The micrococcus lanceolatus, the pneumobacillus of Friedländer, the streptococcus pyogenes, the staphylococcus pyogenes aureus, albus, and citreus; the Klebs-Loeffler bacillus, the tubercle bacillus, the gonococcus, the bacillus of influenza, and the diplococcus intracellularis meningitidis. In the examinations he had made he had been surprised at the frequency with which the last-named bacillus had been present. In one of his cases the smegma bacillus had been mistaken by the first examiner for the tubercle bacillus. Many clinicians had reported that in the cases in which the pneumococcus was present complications were very apt to arise, and while this was true, his experience indicated that the staphylococcus, either alone or in combination, was the most virulent.

Discussion.

W. H. HASKIN, of New York, said that in a case which he had had under observance he had found time and again the smegma bacillus, and had been impressed with its close resemblance to the bacillus of tuberculosis. However, it was rarely, if ever, found singly, the tubercle bacillus was very rarely found in middle-ear disease, and he believed in many of the reported cases this error had been made of confounding the smegma bacillus and the bacillus of tuberculosis.

E. B. DENCH said that an early bacteriological examination in an acute case proved very helpful in making a prognosis, particularly as regards mastoid complications and infection of the lateral sinus. They had found at the New York Eye and Ear Infirmary that, in cases of streptococcus infection, there was very apt to be mastoid involvement. In these cases it was now their practice to make no effort to abort the mastoid inflammation, except by incision of the drum. If the case did

not promptly show signs of improvement the mastoid was at once opened. Mention was made of a case in which the symptoms had developed within a few hours, and the examination showed a streptococcus inflammation. Only one ear was affected at first, and the other drum membrane appeared perfectly normal, yet, within two hours, the membrane of the second ear became inflamed, and streptococci were found on this side also.

M. D. LEDERMAN, of New York, said that he had had examinations made in several cases of chronic suppuration, and the bacillus of meningitis had been found. The pathologist did not attach any special significance. Where there were symptoms pointing to inflammation of the bony structure in these cases it was well to operate early.

C. R. HOLMES, of Cincinnati: The importance of such examinations could not be denied, yet unless such examinations were made by experts the results would be misleading. They should be made a matter of routine.

Dr. PHILLIPS, in closing the discussion, said that if doubtful about the advisability of doing a mastoid operation, the finding of numerous streptococci should decide in favor of immediate operation.

Case Showing Deformity after Double Mastoid Operation.—C. R. HOLMES, of Cincinnati, presented a lady to show the deformity left after a very extensive double mastoid operation done five years ago.

Two Cases of Mastoiditis, One Resulting in Thrombosis of the Cavernous Sinus, the Other Complicated with Tumor of the Cerebellum Simulating Abscess, by EWING W. DAY, Pittsburgh.

The first case was that of a child of eleven years, admitted to the hospital on January 12, 1901, in a septic condition. It was at once operated upon, but by the following day the temperature had risen to 104° F. A pocket of pus was found and evacuated. On the morning of the twelfth day the right eyelid was swollen and discolored, but the ophthalmoscopic examination was negative. A diagnosis of infective thrombosis of the cavernous sinus was made. An exploratory incision into the

orbital cavity failed to evacuate any pus. On the twenty-second day ulceration and sloughing of the cornea began as a result of pressure, and the temperature varied from 100° to 103° , and the pulse was rapid and weak. On the twenty-fifth day the lids of the other eye became similarly affected. One eyeball collapsed as a result of the sloughing, but in the other eye this was prevented. The patient slowly recovered. It was evident that the thrombus could not have been an infected one. The child had passed through measles and typhoid fever within a few months of the onset of the mastoiditis.

The second case was that of a child of seven years, admitted to hospital in April, 1901. It had suffered from a chronic otorrhœa and more or less headache. There was no swelling over the mastoid, but tenderness on deep pressure. There was convergent strabismus and optic neuritis in the right eye, and the gait was slightly staggering. The mastoid was opened and found normal, and the skull was then opened over the left cerebellar lobe, expecting to find an abscess, but none was found. The patient did well, but soon became stupid, and a hernia of the cerebellum occurred. The post-mortem showed softening of the frontal lobes and a tumor, the size of a hen's egg, in the right lateral lobe of the cerebellum. The lower lobe was softened. The aqueduct of Sylvius and the ventricles were greatly dilated. The microscopical examination had not been completed.

Report of an Exploratory Operation for the Relief of a Possible Cerebellar Tumor or Abscess—Recovery from Operation—Death Three Months Later—Autopsy, by T. PASSMORE BERENS, New York.

The patient was a child of fourteen who responded slowly, though correctly, to questions. Paralysis of the sixth, seventh, and eighth nerves; vertigo, vomiting, and progressive paresis of extremities. Operation gave temporary relief, and death occurred eventually from hæmorrhage into the brain. The autopsy showed a large mass involving the pons and upper half of the medulla, which was found to be a glioma.

Discussion.

W. C. PHILLIPS said that he had followed the case reported by Dr. Berens, and remembered that at the time of the operation not one of the otological staff of the hospital was convinced

that it was an operative case. The operation was done at the request of the neurologists, and in the manner indicated by them.

DR. BERENS said that the subsequent history showed the operation to have been justifiable, because the boy was entirely relieved of his pain and greatly relieved of vomiting probably by the drainage of the cerebrospinal fluid, and his life was prolonged, probably at least two months, by the operation.

The Pathology and Diagnosis of Otitis Media Insidiosa (i. e., Sclerosis), by HENRY J. HARTZ, of Detroit.

The hyperplasia begins within the bone, and involves especially the articulation of the stapes and the oval window. This process constitutes not only a hyperplasia but also a hyperostosis and metaphasia, and might localize itself in any of the structures of the labyrinth and in the chain of ossicles. When confined to the labyrinth the integrity of the acoustic nerve might be affected in a purely mechanical way and induce Ménière's complex of symptoms. In this sclerotic process the cartilage disappeared, becoming converted into osseous tissue, and when the tip of the cochlea was involved the patency of the Eustachian tube was threatened. In most cases the membrane of the middle ear had been found thickened as a result of hyperæmia, but there were few signs that the disease was the result of middle-ear suppuration. Rheumatism, gout, syphilis, and scrofula, and diseases of the nasopharynx, such as adenoids and enlarged turbinals, were looked upon as predisposing causes. The duration of the process had been known to vary from three to thirty years. The diagnosis was made by the exclusion of all other forms of progressive deafness and by the functional test. Statistics showed that about ten per cent. of all middle-ear diseases were examples of true sclerosis or the result of spongiöse formations. There was usually a high degree of deafness in both ears, and the process began usually between the age of twenty and thirty years. Women were more often affected, and seventeen per cent. arose during the puerperium. The deafness of old age must be excluded. Most important of all was the exclusion of catarrhal and suppurative diseases of the middle ear and tube. By the determination of the lower tone limit one could say whether the sclerosis was in the sound-conducting apparatus. Dr. Hartz exhibited Pro-

fessor Bezold's continuous tone tuning forks and demonstrated the mode of using them. Microscopical sections of the labyrinth and middle ear showing spongiöse formation in the cochlea and ossicles were exhibited.

Discussion.

WILLIAM L. BALLENGER, of Chicago, said that this paper was the clearest exposition of the subject that he had heard. The cases had been divided into two broad classes, one involving the oval window, and the other in which the disease was chiefly confined to the labyrinth. To this might be added a third class, made up of a mixture of these two. A positive diagnosis was usually made only by microscopical and post-mortem study. The disease was not always slowly progressive, but sometimes proceeded by leaps and bounds. This was probably to be explained by the involvement of the region of the greatest functional activity, *i. e.*, the region of the oval window. If the more remote parts of the bone were involved, then the deafness would be more insidious. He believed with Dr. Hartz that the functional tests of the ear were as important to the otologist as the ophthalmoscope to the ophthalmologist, and he was, therefore, pleased that this set of instruments had been exhibited.

C. R. HOLMES said that the subject was comparatively new, and not very easy to master, although certainly a very important one, as stated by the last speaker. The tests were time-consuming, but it would well repay the patient to liberally remunerate the specialist who would carefully make the differential diagnosis, and so save months of inappropriate and ineffective treatment.

Prognosis in Chronic Catarrh of the Throat and Ear. Some Remarks by a Would-Not-Be-Pessimist, by THOMAS J. HARRIS, of New York.

He said that most cases of catarrh were dependent upon an underlying cause, *e. g.*, the lymphatic diathesis, a chronic derangement of the gastro-intestinal canal, the uric acid diathesis, etc. The common error was to look too intently at the local picture. He believed our progress in the treatment of chronic catarrh of the ear had been very slight as compared with advances in diagnosis. Tubal therapeutics and pneumo-massage were at best too often of temporary benefit, and sometimes of decided

harm. A promise to check the deafness was often all that could be given with safety. Prophylactic measures were of the greatest value, especially the early removal of the ever-present adenoids.

Discussion.

WENDELL C. PHILLIPS believed the author of this paper had made these pessimistic statements only to arouse opposition and excite discussion. We were all conscious of failures in certain cases. He did not think it was possible, for example, to convince any member of this society that it was desirable to abandon the use of the Eustachian catheter, even though aurists of high reputation, having lost interest in their work, had stated their belief that this instrument was almost useless. He was very glad to have the opportunity to champion the use of the catheter when intelligently applied.

C. R. HOLMES believed in the use of the aural catheter. It was well not to promise too much in these cases. All that he would say to his patients was that he hoped to be able to secure to them as good hearing as they possessed when in their best physical condition. He was decidedly opposed to the removal of nasal spurs unless they were distinctly responsible for some pathological condition. In some cases a turbinectomy would make the subsequent use of the aural catheter unnecessary. Much depended upon habits of life.

T. PASSMORE BERENS: The practice of removing turbinals wholesale was no longer popular, and more dependence was placed upon hygienic treatment.

J. A. STUCKY at the present time uses the catheter once when formerly he used it perhaps fifty times; he does not interfere with spurs unless they are actually doing harm. He does, however, remove pathological conditions of the turbinal.

MAX GOLDSTEIN said that if the author of the paper had confined his criticisms to the sclerotic form most of those present would probably agree with him. One should sharply distinguish between the sclerotic and the hypertrophic form.

W. L. BALLENGER understood that all the author of the paper desired was that each case should be thoroughly studied and "fashions" in treatment avoided. We should not set our faces against the removal of nasal spurs, because at times these operations do much good.

G. L. RICHARDS mentioned a case in which, after the removal of an obstructing nasal spur, the hearing improved very much without direct treatment of the ears.

Case of Thyroid Gland Tumor in the Larynx, by WALTER A. WELLS, Washington, D. C.

This condition is very seldom met with, there having been only nine or ten cases recorded in which normal thyroid-gland tissues had been found in the larynx. His own case was peculiar in that the main thyroid showed microscopically only colloid degeneration, whereas the intralaryngeal tumor had the microscopical characteristics of an adenocarcinoma. In this case he had made use of the styptic action of gelatin with good result. The patient was a woman of fifty who had had a goiter for many years before coming under observation. She sought relief because of a sensation of choking and paroxysms of dyspnœa. Although the history indicated a strong hæmorrhagic tendency after operative interference, the tumor was removed at several sittings, gelatin being freely used locally and successfully to control the hæmorrhage. Out of nine reported cases of thyroid in the larynx, six occurred in women and four had been reported from one clinic, making it probable that this condition was not so rare as the statistics seemed to indicate.

M. A. GOLDSTEIN asked how the gelatin had been used in this case.

DR. WELLS replied that a ten per cent. sterilized solution of gelatin, to which had been added one per cent. of calcium chloride and half of one per cent. of sodium chloride, was employed. It was applied on a cotton swab before and throughout the operation.

Foreign Bodies in the Larynx and Lower Respiratory Tract in Children, with Report of Six Cases, by THOMAS H. HALSTED, Syracuse.

Reported six tracheotomies in children under two years and a half old for the removal of foreign bodies lodged in the larynx and bronchus. Of the six cases five recovered and one died. At the time of operation, dyspnœa was urgent in all. In the cases reported the first spasm partially subsided after a few moments and often misled both parents and physician to believe that the foreign body had been ejected. The dyspnœa re-

curred after a short interval and became constant with at times exacerbations. Cyanosis, epigastric recession were present in all cases and because of the nature of the foreign bodies in his cases in only one would the X-ray have been of service. In his first case, a piece of a shell of a pecan nut was firmly lodged in the ventricle of the larynx. In the second case it was a coffee bean, which remained in the right bronchus for one week. In the third case a peanut was extracted with much difficulty from the right bronchus, where it was wedged at a distance of four inches from the tracheal opening. The fourth case was somewhat similar to the third one, excepting that it was coughed up to the tracheal opening after the trachea had been opened and the trachea tickled with a cotton-covered probe to excite cough. The fifth case terminated fatally, death due to pneumonia, and the foreign body not found or removed, and although no autopsy could be obtained there was every reason to believe that the case was one in which a gold ring had lodged in the bronchus. No X-ray apparatus was at hand at the time. The last case reported was that of a twelve-months-old baby, in whom three fragments of eggshell had lodged in the larynx, remaining there for two weeks, causing great dyspnœa. The consent to perform tracheotomy could not be obtained for two or three days after the diagnosis was made and then the child was in bad condition, but nevertheless the operation was successful and the child recovered. The unreliability of statistics regarding operative and let-alone treatment was well shown by the fact that the author knew of a case in which a child died of pneumonia, and the discovery of a shoe button in one of the bronchi was the first knowledge that the parents or physician had that a foreign body had passed into the air passages. It was unsafe the author thought, to postpone opening the trachea, particularly in children, after the ordinary methods failed to remove the foreign body.

Discussion.

G. HUDSON MAKUEN said that Dr. J. A. Killien had reported the removal of a fish bone 2 mm. long from the left bronchus of a child three and a half years old, under control of the eye by means of bronchoscopy without injury to the tissues, and that Dr. A. Coolidge, Jr., of Boston had spoken of the ease with which foreign bodies may be removed from the trachea and bronchi through a straight tube placed in a previously made

tracheal opening, artificial light being reflected into the tube from a head mirror, and had reported three cases in which he had employed this method with entire success.

A Simple Method of Correcting Deflections of the Nasal Septum, GEORGE FETTEROLF, Philadelphia.

The author emphasized the importance of recognizing the fact that redundant tissue is always present and classified the different forms thus: (1) Deviation without thickening; (2) deviation with thickening, and (3) thickening without deviation. The most difficult to correct were those embraced in the first two classes. The main difficulty that he had experienced had been in the removal of the excess of tissue. The operation should be so planned, if possible, as not to disturb the mucoperichondrium of the concave side. He employed general anæsthesia and also applies adrenalin solution to the septum. He makes use of a specially devised saw-file, and makes one, two or three grooves to the perichondrium on the opposite side. The antero-posterior excess can be removed along with the vertical by having his grooves cross each other. The instrument is made in three sizes so as to adapt it to the removal of varying degrees of redundancy, and with it a V-shaped cut can be readily made. A truncated form is used when the grooves already made with the sharp instrument need to be widened. The splint is ordinarily not removed for five days after the operation. By the method described, preliminary dissection of the mucous membrane is unnecessary and the operation can be completed in three or four minutes. The two margins of the V-shaped cut are exactly parallel and thus accurate completion and quick healing are promoted.

J. A. STUCKY said that he had been deeply interested in this paper because at the meeting of the Southern Section considerable criticism had been directed against the working qualities of Dr. Kyle's saw.

WILLIAM R. LINCOLN, of Cleveland, said that he understood this new instrument had been devised to perfect the technique of Dr. Kyle's operation. The instruments of Asch, and others, were generally thought to be excellent for cases not urgently requiring operation.

M. A. GOLDSTEIN said that the mechanical features of this instrument seemed to him to constitute a distinct advance on

former methods. The instrument takes up very little room in the nasal cavity, and its cutting edges operate on both the in and out strokes of the saw. He thought that with this instrument the operation could be made submucous more easily than with any other instrument.

D. BRADEN KYLE said that he had employed this V-shaped operation for the correction of deformities of the nasal septum for six years. When describing this operation about three years ago he had only made a limited use of it, but in the last three years this had been the only operation that he had done. At that time he made use of a saw which, if properly made, worked satisfactorily in cutting out the V-shaped piece. By so doing two things were accomplished, viz.: (1) the cutting reduced the redundant tissue, and (2) the septum was broken up. The V-shaped file does away with one instrument and shortens the operation materially. There was no bulging of the septum after the operation and no redundant tissue if a sufficiently large V-shaped cut were made. With the V-shaped operation, and particularly with the saw file, perforation of the septum was practically wholly guarded against. The septum must be made to swing freely from the top. Before taking out a number of V-shaped pieces it was well to dissect up a flap of mucous membrane, which is afterwards allowed to fall back again. He had never seen any bad effect from even the prolonged use of his metal tube-splint. The tube should be flattened next to the septum.

DR. FETTEROLF, in answer to a question from Dr. T. H. Farrell as to why general anæsthesia was employed in this operation, said that the object was to secure complete relaxation of the patient and avoid possible fainting during the operation.

BRITISH MEDICAL ASSOCIATION. SECTION OF LARYNGOLOGY.
Seventeenth Annual Meeting, July 29, to August 1, 1902
(continued).

The Connection of the Isolated Respiratory Fibers of the Recurrent with the Symptomatic and Cardiac Nerves, ADOLPH ONODI, Buda Pesth.
(See p. 36, January number of this volume).

A Discussion on the Ultimate Results of Surgical Operations upon the Frontal Sinus and Maxillary Antrum, MARCEL LENOYEZ, Paris.

"Are frontal and maxillary sinusitides sufficiently serious to warrant radical surgical treatment?"

Yes, because (1) They threaten the brain, frontal sinusitis especially, induce meningitis and cerebral abscesses, more and more numerous as they are more fully recognized. (2) They threaten the orbit and the eye. Maxillary sinusitis, in particular, causes orbital abscess; it also endangers the lachrymal ducts, and causes lesion of the uveal tract. (3) They endanger the respiratory passages, cause descending laryngitis and even pseudo-pulmonary tuberculosis; Moure & Brindel. (4) They affect the general health.

"Cannot frontal and maxillary sinusitides heal spontaneously?" Acute form may, but not always. "On the other hand, chronic sinusitis never recovers without interference."

"Sinusitides vary clinically in their behavior, so that one uniform treatment is not suitable at all." May be classified as (a) isolated or (b) combined.

I. *Isolated Frontal Sinusitis* rare: always anatomically combined with limited anterior ethmoiditis and usually with maxillary implication.

Acute simple form may be treated by "prolonged inhalations of steam of menthol water, assisted, if necessary, by process of negative Politzerization of Seifert." Also by catheterization per ostium naturale in about one-quarter of cases.

The best methods of radical operation in vogue are Ogston-Luc's & Kuhnt's. But the former is frequently followed by recurrences and the latter always leaves such disfigurement. Our author advocates and practices what he calls the "process of Kuhnt-Luc, borrowing from Kuhnt's method the curative perforation, the knowledge of total excision of the anterior wall of the frontal sinus which permits perfect curetting, and the suppression of the diseased cavity. From Luc's method one may borrow its elegance, the knowledge of fronto-nasal drainage, which opens the anterior ethmoid wide and allows the wound to be immediately closed." The diplopia occasionally following this operation, due to its interference with the pulley of the superior oblique muscle, "may be rectified by a complementary operation consisting in stretching the inferior rectus muscle of the affected side (Landolt)." The author made

fifty-three per cent. cures with the Ogston-Luc and one hundred per cent. cures with the Kuhnt-Luc procedure.

Complicated Forms.—(a) With orbital fistula; such fistula should be dissected out and necrotic bone entirely excised. (b) With abscess of superjacent soft parts; it is dangerous to encourage primary union. (c) With cerebral complications; “operative immediately, even in most recent cases, make extensive incision, and make room by wide excisions.”

II. *Isolated Maxillary Sinusitis.*—(1) Nasal type caused by occluded orifice; (2) odontogenous type, by a (a) open caries, (b) stopped teeth incompletely disinfected, (c) closed dead teeth. In simple form employ, first, conservative treatment; remove cause of retention by clearing ostium maxillare of obstructions, or remove dental cause of irritation. If possible, do not cause alveolar communication with buccal cavity. Syringe through natural opening, or artificial, preferably puncture through inferior meatus, or thirdly by syringing through small perforation through alveolus (Cooper’s operation), or in canine fossa. The last the author rejects in favor of the second.

Radical Operations.—The only two worthy of mention are Desault’s & Luc’s (or Caldwell-Luc’s.) [The first is too well known to repeat here—Abstractor.] The second consists in performing Desault curettage of sinus, and then making a permanent opening through inferior meatus for subsequent treatment and closing the canine opening.

Combined Forms.—(a) External maxillary sinusitis, *i. e.*, where abscess of cheek or orbit co-exists. Procedure advised is “Allow abscess to mature, assist it by ordinary local treatment. Then, later on, freeze the site, and operate according to Luc.”

(b) Maxillary sinusitis complicated with alveolar osteitis. “In this case and this case only Luc’s operation must give way to Desault’s operation.”

III. *Combined Sinusitis.*—“Given the number of sinuses, the possible mathematical combinations are 1203. The fronto-maxillary type may succumb to ordinarily employed conservative local treatment, or to medicine, following the radical process. “Operate on maxillary sinus by Luc’s method as far as and including curetting, then apply a provisional hæmostatic plug. Having cleansed the hands in the same manner as if about to operate on another patient and using different instruments, operate on the frontal sinus according to the Kuhnt-

Luc method. Then return to the maxillary sinus, again examine its cavity and close the buccal wound. Double maxillary type, double frontal type, double fronto-maxillary;—if the patient's condition does not allow the quadruple operation at one sitting, operate on two frontal and one maxillary."

Second Paper of the Symposium, by HERBERT TILLEY, B. S., F. R. C. S., M. D.

Attention to the general health and habits of the patient is too frequently forgotten

Acute Suppuration of the Frontal Sinus.—Mentholized steam inhalations and application of cocain or suprarenal capsule to the middle turbinated region are frequently curative.

Chronic Suppuration.—One should bear in mind 'that not infrequently this sinus is "almost completely divided by bony septa into smaller chambers or narrow recesses, the whole being lined by a pyogenic degenerated mucous membrane of a coarsely villous or even polypoid nature. . . . Cutting or punch forceps are preferable to instruments which exert a dragging force."

For intranasal irrigation may be used: boric lotion, carbolic lotion (1 in 60), formalin (1 to 2000), Condyl's fluid, hydrogen dioxide (10 volume sol.), or iodoform emulsion. This may relieve and is an indispensable preliminary to external operation.

External operation is advisable: "(1) When severe headache or profuse discharge continues in spite of intranasal treatment. (2) When suppurating external fistula is present. (3) When the purulent discharge seriously affects the general health of the patient, or causes local changes by its irritating effects upon the mucosa of the nose, pharynx, or larynx. (4) In cases where patients are going abroad or to situations where skilled help is unattainable in case drainage from the sinus becomes obstructed." These indications seem clear, but the author continues: "I know of no surgical question the satisfactory solution of which is hedged around with so many difficulties."

A minute discription of a slight modification of the Kuhnt-Luc operation is then given. He says ultimate success and freedom from grave complications greatly depend upon patency of the opening into the nose and to removal of any suppurating ethmoidal cells; adding "I would impress the necessity of a careful search for narrow extensions of the main sinus and for extensions of the ethmoidal cells." Three cases of such extensions are then cited.

If the sinus is not too large it should be obliterated.

Temporary strabismus may occur from inflammatory exudation around the pulley of the superior oblique muscle. Septic infection of the frontal bone is usually due to imperfect drainage. The diploe of the frontal is prone to infection, therefore it is not advisable to pack the sinus tightly.

Maxillary Antrum.—Upon this the operative procedures are: (1) opening into the inferior meatus of the nose; (2) communication through canine fossa with the buccal cavity; (3) opening from the empty root-cavity of a bicuspid or molar tooth, and (4) failing to cure by these methods, make a large opening through canine fossa, curette the sinus and then open into the nose for subsequent drainage cleansing.

Third Paper, by Dr. GRUNWALD, Munich.—The inferior turbinal is too important a structure to be removed for the sake of drainage of the antrum through the nose. In suitable cases the disfigurement caused by removal of the anterior wall of the frontal sinus is only slight.

Fourth Paper, Prof. KILLIAM, Freiburg.—Frequently sinu-
osities and cells are found in the orbital roof; therefore, "in addition to the removal of the frontal wall, a resection of the lower wall is necessary." To avoid greater deformity he leaves the upper bony margin of the orbit in the form of a narrow crest. By a resection of the processus frontalis of the upper jaw the ethmoid was made accessible the nasal mucous membrane was preserved, and in the form of a flap was implanted into the wound. The way from the frontal cavity to the nose was thus widely patent, and could not become obliterated by adhesions. No drainage was necessary. The external wound healed by primary union.

Fifth Paper, DUNDAS GRANT, M. D., F. R. C. S.—This speaker advocated intranasal methods, if possible. When infection was from the nose he recommended, in the first instance, at least, intranasal methods.

Sixth Paper, SCANES SPICER, M. D., B. Sc.—Had run across many apparent failures of the alveolar method, which made him favor very strongly his method of making a primary opening through the canine fossa and a secondary one into the nose for subsequent drainage and cleansing. The buccal incision to be closed by first intention.

For frontal empyemata he resected the operculum and curetted the anterior ethmoidal cells. Then a course of spa treatment, diet and sulphur waters, was frequently beneficial. But when there were symptoms of pus retained under pressure, of course a radical external operation with curettage of all cavities was necessary.

Replies.—Dr. Lenoyez preferred puncture of the antrum from the nose to the alveolar method.

On the Operative Cure of Laryngeal Papillomata, GREVILLE McDONALD, M. D.

Speaking from an experience of over a hundred operations for benign laryngeal growth, and having tried or seen used all the different methods of treatment devised therefor, he condemns thyrotomy for two reasons. First, it is never necessary, and second, it gives no more guarantee against recurrence than does intralaryngeal operation. With caustics and electrocautery he has had little experience, but after trial of the different instruments devised for this work he has reverted to his own modification of Mackenzie's spoonblade laryngeal forceps. The author has one side of the spoonblade removed from the forceps, thereby avoiding the possibility of wounding one side of the larynx while operating on the other. This, of course, necessitates different forceps for each side of larynx. The advantage of these forceps over the tube ones is their greater firmness, which aids the tactile sense; this the author finds frequently quite helpful in operating. The recurrences reported after this procedure, the author attributes to incomplete removal.

He sums up: "(1) Use cocain as freely as the patient will bear, never exhibiting much on the first attempt, but judging from experience in each individual case what dose you dare give; (2) operate boldly and cleanly, never removing anything that resists your instruments; (3) cultivate the art of ambidexterity, though I am not prepared to say it is essential."

Discussion.

DUNDAS GRANT advocated greater perseverance in endolaryngeal methods before external operations were performed, although he admitted the necessity of the latter.

SCANES SPICER employed the combined cocain and chloroform anæsthesia in adults as well as children, with his patient in the sitting position.

HERBERT TILLEY used chloroform, with his patient in the recumbent position. He had had no success with tracheotomy performed as the side method of dealing with papillomata.

WALTER DOWNIE thought it impossible to completely remove papillomata from the subglottic region by endolaryngeal methods; when in this locality, therefore, thyrotomy was by far preferable. On account of its clear view of the field of operation he thought there was less danger of injuring the cords.

DR. McDONALD uses chloroform anæsthesia in children; sitting posture when possible, but when not the recumbent posture, then depending on his tactile sense, instead of sight, for guidance. Of course, if the growth is below the reach of forceps, thyrotomy is necessary.

Bromide of Ethyl Anæsthesia in Operations on the Throat.—A. BROWN KELLY, D. Sc., M. B., C. M.

A classical paper giving (a) the history of the subject, (b) the physical and chemical properties of bromide of ethyl, (c) preparation, (d) position in which it may be administered, (e) mode of procedure, (f) dose and phenomena during administration, (g) dangers, (h) precautions, (i) advantages and disadvantages. It is impossible to abstract this with credit to the subject or the author, because it is necessary to know the minutiae.

Advantages: (a) No special apparatus is necessary, (b) narcosis is rapidly produced, (c) the vapor is not irritating to the respiratory mucosa, (d) the upright position is permissible, (e) quick return to consciousness, (f) the after-effects are unimportant or nil, (g) the danger is insignificant, and, (h) a skilled anæsthetist is not absolutely necessary.

Disadvantages: (a) Its unstable and impure character, (b) the persistence of muscular tonus under narcosis, and of (c) frequent vomiting afterwards, (d) in adults, occasional excitement as the effects of the anæsthetic are passing off.

Chloroform, ether, etc., should be used when prolonged narcosis is necessary.

Moure's Operation for Deflected Septum, by I. HERRINGTON PEGLER, M. D.

After removing spurs, angular ridges, and any luxated anterior extremity of the triangular cartilage, make "a free in-

cision through the septum upwards of an inch in length, parallel with the floor of the nose, and another along the roof of the nose for about the same length." The wedge-shaped fragment thus cut is forced over with the finger, and retained in place by "Moure's metal tube dilator." The author prefers smaller shears than Moure's, also uses Lake's india-rubber splints instead of Moure's dilator.

The Present State of the "Ozæna" Question, by L. GRUNWALD, M. D., Munich.

A brief review of some of the theories formulated to explain the etiology of this obscure disease; but the author believes that a focal suppuration, somewhere in the nasal cavities or the accessory sinuses, is the cause in every case. The location of these foci is occasionally so obscure that it is almost impossible to detect them. But, he admits that in some patients these focal diseases may exist without ozæna.

To explain this difference, although he will not admit that a specific bacillus alone is the etiological cause of ozæna, he says, "from whatever place the secretion may arise, it is not to be denied that under certain conditions, or under certain forms, it may be caused by certain specific infection."

"It is true that only radical focal treatment has up to now been able to do away with all secretion," although imperfect focal treatment, as well as general treatment, has cured some cases.

ABSTRACTS FROM CURRENT LITERATURE.

External Nasal Neoplasm.—John C. Lester, Brooklyn.
—*Ann. of O. R. and L.*, May, 1903.

Reported, because he had failed to find in nasal literature any report of growths starting from the tissues of the external structure of the nose, *i. e.*, not counting syphilitic neoplasms. This, in a widow of eighty, was rapidly growing (for six weeks) from the middle third of the nose, having started two or three years before as a warty excrescence; it proved to be an epithelial growth, with the usual

corneal surface layer of warts, considerable irritation at the sides and base, and a marked tendency throughout to the formation of "pearls," or epithelial whirls. There seemed to be a tendency, not very active, to invasion of the surrounding tissue. Excision down to the cartilages and lower third of the nasal bone was easy, except that free hæmorrhage required torsion of a few blood-vessels. Healed by first intention; no return after three years.

J. L. M.

Podophyllin Action on the Eye, Locally.—A. N. de Rocca-Serra.—*Rev. de Therap. Med. Chir.*, August, 15.

Free lachrymation, catarrhal conjunctivitis, without much discharge. Keratitis, always central, and always accompanied by slight loss of the corneal epithelium. The cornea slowly clears from the periphery towards the center.

Acute iritis follows the entrance of the podophyllin very quickly—within twenty-four hours. The iris is intensely congested, the pupil is very small, and acts neither to light nor atropin; it is soon closed by exudation. There is intense pain, radiating into branches of the fifth nerve. This attack lasts about three days; medicines have no effect on the course; suddenly there comes a crisis, after which pain ceases, the pupil dilates to atropin, and in a few days all trace of inflammation disappears. The rapid course of the disease gives us the most ready means of diagnosis. In the majority of instances no evil effects remain, in spite of the very grave appearance of the disease at the onset.

Pathologically, only the anterior half of the globe is affected. The cornea is much infiltrated, the iris is enormously congested, the vessel walls are covered everywhere by a layer of leucocytes. The ciliary processes appear hypertrophied. Very commonly there is a ring of pigment on the anterior capsule of the lens. The action of the drug appears to be in the first instance a stimulation of the trifacial, followed by paralysis. This is shown by the hyperæsthesia of the cornea, which is replaced by anæsthesia after a few days. The contraction of the pupil and the engorgement of the iris vessels are probably attributable to this cause.—*Treatment*, Nov.

Plastic Artificial Vitreous in Mules' Operation.—E. L. Oatman, Brooklyn.—*Med. Rec.*, March 7, 1903.

The profession is indebted to Dr. Oatman, who first used paraffin for this purpose January 17, 1902. Two other suc-

cessful cases were later conducted, upon his suggestion, by Edgar S. Thompson and D. Foster.

Paraffin with a melting point of 125° , or preferably of 135° , was brought to the boiling point and cooled very quickly, as in histological work, to prevent crystallization and the formation of bubbles. A ball was then roughly shaped with a knife. This was brought to the required size by placing it on a long needle and rotating it in the flame of an alcohol lamp, the action of the flame being controlled by occasionally dipping the ball into a cold bichloride solution.

When fistula follows the Mules' operation it will close spontaneously if a sufficient quantity of the artificial vitreous can be removed. That which remains will form a good support for an artificial eye.

Paraffin used for this purpose is prone to produce fistula by softening and getting between the lips of the wound, or into the track of a suture. These accidents are to be avoided by using paraffin, or some modification thereof, that will not soften at body temperature; also by so suturing the scleral wound that no aperture remains through which paraffin can exude.

In the first and second cases the paraffin leaked until it sank to the level of the fistula, which then healed spontaneously, affording a satisfactory stump with good motility ten months later.

Of course this modification of Mules' operation requires a more extended trial before its value can be estimated.

J. L. M.

One Hundred and Twenty-five Operations for Cataract, with Special Reference to Results in Complicated Cases and Aged Persons.—Theodore F. Bliss, Springfield, O.—*Col. Med. Jour.*, February, 1902.

These operations were made under all kinds of conditions, in all sorts of places, from one year old to ninety-three. Three were over ninety, two of them getting good vision at ninety-three. One, an old man of ninety-two, for whom I had made a very successful extraction of a cataract, lost the eye by retinal hæmorrhage a half hour later. This was the only eye that did not stand the operation.

Of fifteen cases between eighty and ninety, four were treated in the general hospital, and two eyes were lost by suppuration; both had a second operation on the other eye and regained the

sight without a single unfavorable symptom, one in the hospital and one at his home. Of the remaining eleven one eye was lost by suppuration, a feeble old woman whose mind was unbalanced, and the cornea badly degenerated. I left the case in the care of a physician and did not learn until four days later that the eye was in bad condition, and was then unable to check the process.

Forty-two operations were in those between seventy and eighty years of age. In two apparently favorable cases the eyes were lost by inflammation, and I was unable to trace the cause of the infection. In three cases there was a tedious convalescence from iritis, but it did not prevent a good result. Operations on children born blind from cataract should be made very early to gain vision, and even then it is more than likely that failure will result from causes beyond the reach of surgery.

In making an operation for cataract I prefer the simple method without iridectomy; in seventy-five of these cases by that method I had a slight prolapse of iris seven times. It delayed recovery in but two cases and did not materially interfere with a good result in any. Loss of vitreous occurred three times, but did not prevent a good result. Of the patients over seventy years of age, but three failed of ultimate relief, including those that submitted to a second operation, and none under seventy where the cataract was not complicated with intraocular disease. A continuous series of sixty-one cases recovered without suppuration, and all but four were operated on at their homes.

It is apparent from the above that serious inflammation is more liable to occur in the aged, as all of these cases where the eye was lost were over seventy, and the severe inflammations that were controlled were under that age; in no case was the eye lost, and it was not seriously impaired in more than three cases.

In operating for cataract I have my patient in bed with the head resting upon a pillow on my knees. I steady the eyeball with the first finger of one hand at the inner canthus and make the incision in the upper margin of the cornea large enough for the easy delivery of the lens. I then remove the speculum, close the eye for a minute to allow a relaxation of nervous tension and make a capsulotomy and complete the operation without replacing the speculum. By holding the head on my knees I can anticipate and control any sudden motion of my patient. By

using two instruments only in the eye it lessens the danger of infection. I use the lightest gauze dressing and a shield, and if possible change all dressings myself for at least four days. Unless contra-indicated I do not open the eye until the sixth day, when I begin the use of atropin once or twice a day to prevent iritic adhesions.

I am often asked when is the proper time to operate for cataract. My rule has been to propose an operation, particularly in those past seventy, as soon as the sight is too bad to read very coarse print, if other conditions are favorable.

Glioma Retinæ, with Report of Five Cases.—**Christian R. Holmes**, Cincinnati.—*Jour. A. M. A.*, March 28, 1903.

This disease is limited to childhood (one case in every 2500 or more cases of eye disease), originating four times more frequently from the posterior than from the anterior half of the globe. It may occur that sarcoma of the choroid takes on a gliomatous character. This perhaps explains Von Graefe's two observations of glioma in adults.

The diagnosis between gliomata and other tumors is easily made, but the differentiation of the pseudo-glioma is fraught with many difficulties, but only when the disease is well advanced. We must differentiate from: (1) detachment or cysts of the retina; (2) tumors of the choroid and ciliary region; (3) masses of inflammatory exudate in the vitreous (pseudo-glioma); (4) the combination of true glioma with any of the above, and (5) cysticercus.

The greatest difficulty in making a correct diagnosis occurs when the cornea, aqueous or lens has undergone such changes as to prevent inspection of the interior of the globe, cataract being the most frequent condition encountered. As a rule, we may state that inflammatory exudates into the vitreous give a yellowish reflex with a metallic luster and smooth surface, while the color of glioma may be a light yellow, reddish or greenish yellow, and the growth is nodular; diagnosis may also be complicated by exudate or membrane behind the lens or in the vitreous or by acute suppurative hyalitis.

Differentiate from detached retina by careful ophthalmoscopic examination and from tumors of the choroid in that they are nearly all pigmented. Leucosarcoma of the choroid is rare: it develops as a solitary half round mass over which the retina

may be atrophied, but does not form reduplications and thickened masses. As yet we know of no case in which an individual who had an eye removed in childhood for glioma, has transmitted the disease to his offspring. There are, however, many cases on record where several members of one family have been affected.

The disease may be divided into three stages of development :

1. Period of intra-ocular growth, without increased tension or inflammatory symptoms.
2. Glaucomatous or inflammatory period, which ends with rupture of the globe.
3. The period of extra-ocular growth and metastasis.

In some cases there is temporary arrest and even retrograde change, such as phthisis bulbi after rupture or violent inflammatory reaction of the globe, the temporary arrest being probably due to destruction of the vessels of nutrition with degeneration of the glioma cells as a result of the suppurative process. Without surgical interference the child lives a few months or three years, as an average. If there be no return in two years after enucleation the case may be regarded as cured so far as that side is concerned. The only treatment that can be considered as offering any chance of saving life is removal of the affected eye, with as much as possible of the optic nerve, at the earliest possible moment during the first stage. In operations undertaken during the second stage, before the rupture of the cornea, the chances of success are very slight, since the infection has often extended outside of the globe through the veins or lymph channels. But even then it is our duty to operate, and exenteration of the orbit should be added to the enucleation of the eye, if we hope to arrest the disease. In this stage I regard the use of pastes far superior to the use of cutting instruments, because the liability of opening up new avenues of infection is much greater in the latter method.

When the case has once entered the third stage the rule is that, no matter how thoroughly exenteration is performed, there is always recurrence within a few weeks, and operation in this stage is only justifiable in order to afford temporary relief.

Enucleate if both eyes are affected. Cases of undoubted glioma—as proved by the microscope—have been cured after double enucleation, and as the disease springs from a separate and independent focus in each eye. It is very important to secure witnesses and the absolute consent, preferably in writ-

ing, from the parents, if you are going to remove an eye that still has considerable sight left. When in doubt, take the side of safety; remove no eye that you cannot prove to be pseudoglioma.

J. L. M.

The Eye Symptoms of Incipient Tabes Dorsalis (after New Statistics).—H. Beckers, Milwaukee.—*Milwaukee Med. Jour.*, March, 1903.

(1) Reflex iridoplegia (the Argyll-Robertson pupil), (2) paralysis of the external eye muscles, and (3) atrophy of the optic nerve allow us to diagnose incipient tabes earlier and with greater certainty than do any other symptoms; a history of syphilis in addition makes it almost positive.

(1) This is the most important single symptom, often the earliest. Yet in 20 to 40 per cent. of cases of tabes the light reaction is preserved. In rare cases syphilis can cause a cerebral nucleus affection which may lead to reflex-iridoplegia, or, in a patient with long-standing lues, a different disease, for instance a tumor, or a polyneuritis which is accompanied by iridoplegia may develop without any dependence upon his old luetic infection.

Sometimes, but very rarely (once in 165 cases) reflex iridoplegia does not take the form of the Argyll-Robertson pupil—there is a failure to respond to convergence as well as to light.

Ophthalmoplegia interna, simultaneous paralysis of pupil and ciliary muscles is more frequent in other affections of the cerebral nervous system (syphilis, ptomaine poisoning), than in tabes.

Anisocoria (unequal pupils) was found in 20 per cent. Yet Ivanow found in 134 "healthy" military recruits the right pupil larger in 49 and the left in 53.

(2) Paralysis of the external eye muscles one as of the early symptoms occurred, according to Mann, in only 30 per cent. It frequently is a transient diplopia.

(3) Optic nerve atrophy was found by Mann in 33 1-3 per cent. Uhthoff claims that one-third of all atrophies of the optic nerve are tabetic.

Developing color blindness is another suggestive eye symptom.

An eminently constant early symptom of tabes—pointing surely to tabes if it is associated with reflex iridoplegia—is a girdle-like decrease in sensibility of the skin of the trunk, the

superior border being at the 2d or 3d rib, girdle-like, surrounding the thorax, and descending commonly to a line at the height of the processus xiphoidens. It is an affection of the second to the seventh thoracic segment respectively of its roots; if the first thoracic segment is affected too, the disturbance of the sensibility extends also to the inner area of the arms; seldom a deeper girdle, in the realm of the 5 to 8 thoracic segments is found. This disturbance can be shown best by the examination of the sensibility for pain, exactly like the tabetic disturbance of the sensibility of the legs. Dr. Mann found this disturbance very often (in 20 out of 165 cases) to be the only symptom beside one of the eye-symptoms.

J. L. M.

Otitis Media.—Hugh N. Levell, Louisville.—*Am. Pract. and News*, January 1, 1903.

Ponfick made 100 consecutive autopsies of infants, under three years of age, who died of various acute and chronic diseases. Although otitis media was not suspected in the majority of these cases, it was found to be present in all but nine, unilateral in 13, and bilateral in 73. Rasch, of Copenhagen, found otitis media in 46 out of 61 infants under two years of age, dead of various diseases, mostly infectious.

Barth, of Leipzig, in examining 600 infants, discovered otitis media to exist in about 80 per cent., 24 out of 44 children under three years of age examined by Halstead had middle-ear disease, in but four of whom had involvement of the ear been considered probable.

Von Trolsch found a *normal* middle ear in but 18 out of 47 petrous bones in undetected cases of children, and Reden under similar circumstances found the middle ear free from disease in but 14 out of 80 cases of children under five years of age. These statistics show that the middle ear is involved in a very large proportion of children supposedly suffering from other diseases.

J. L. M.

A New Mydriatic, Bromide of Methyl-Atropin; a Drug Capable of Replacing Homatropin and Euphthalmin.—Darier, Paris.—*La Clinique Ophtalmologique*, November, 1902.

This drug lacks certain inconveniences of atropin and it possesses new qualities. In increased and repeated dosage it

has the same action on the iris and ciliary muscle as the sulphate of atropin. In medium doses (one per cent. strength) the mydriasis produced by it may last slightly more than twenty-four hours, while the resultant paralysis of accommodation lasts but a few hours' time. In weak doses (one-half per cent. strength) combined with one per cent. cocain mydriasis alone is produced.—*Abstr. Ann. of Ophth.*, January.

Two Noteworthy Cases of Extraction of Iron from the Vitreous Chamber by Means of the Giant Magnet.
—Charles J. Kipp, Newark, N. J.—*Arch. of Ophth.*, July, 1902.

Dr. Kipp thinks this the first case where the law of magnetic polarity was applied.

Case 1. "While still more than two inches from the giant magnet, as soon as the current was turned on, I saw a large glistening piece of metal back of the lens rise up and rush towards the outer part of the eye, where it caused a marked bulging of the sclera, at a point about 6mm. posterior to the wound of entrance. Here one end of the piece of iron had become fastened, and no matter in what position the eyeball was put, or how the magnet was moved, it would not budge. I turned the magnet around on its pivot, and as soon as the other pole (not previously used) came near the eye I saw this large mass of iron swing around in the vitreous chamber, the bulged part of the sclera became flat, while the other end of the iron came towards the wound of entrance and, in less time than it takes to tell of, it shot out of the wound of entrance on to the magnet. A bead of vitreous protruded from the wound. The eye was cleaned once more, atropin instilled, a bandage applied, and the patient put to bed. There was no reaction. The wound soon closed. A week after the operation the lens became cloudy, and on the following weeks became opaque throughout. The eye has good perception, and the visual field is intact. The iron removed measured 18 mm. long, was about 2 mm. in width at one end and about 1 mm. at the other, where it was pointed, and was quite thin. It weighed 10 mg."

Case 2. A narrow, sharp piece of iron, not over 2 mm. long, was extracted from the vitreous with the giant magnet. After five months the lens was perfectly clear (only a small opacity in the anterior capsule), vitreous is free from opacities, and with —0.75, V.=5/5.

J. L. M.

BOOK REVIEWS.

LEADERS IN HOMŒOPATHIC THERAPEUTICS.—By E. B. NASH, M. D. Second edition, revised and enlarged. Boericke & Tafel, Philadelphia, 1901; pp. 420; cloth, \$2.50; postage, 13 cents.

An improvement over the first edition of this classic, because there is more of it. The Therapeutic Index and the detailed index to wherever each remedy is mentioned, make the book very practical. Partly because it is the result of the author's thirty years' well-digested study and application of the *materia medica*, and largely from its simple, clear style, the book is such fascinating reading that one finds difficulty in laying it down. It seeks to give the knowledge (or the beginning of it) of the genius of each remedy, which will enable us to prescribe for the patient, even if Pathology has never coined a name for his malady.

"Neither symptomatology nor pathology can be ruled out. Every symptom has its pathological significance, but we cannot always give it in words; the fact that it has such meaning is sufficient reason for prescribing on the symptom or symptoms without insisting on the explanation." The question of dose is still an open one. The abuse of drugs is condemned. Dr. Nash "hoped to so write as to induce any old-school physician, who could overcome prejudice so far as to read any or all of this book, to experiment along the lines indicated, believing that any such physician of sound head and honest heart, will be irresistibly led to give homœopathy a large, and, perhaps, finally the largest, place in his confidence and practice."

When we decide to have recourse to internal medication, we must not forget that it is the individual whose vital forces are perturbed; the symptoms enabling us to decide upon our remedy are usually not found in the organ (eye, ear, etc.), which seems principally, or, at least, most manifestly, affected.

Many an operation is avoided or made successful by such prescribing. The physician who limits his armamentarium by closing his mind to the resources of homœopathic therapeutics can survive (if his patient doesn't), but he is not doing full justice to his patient.

Homœopathy is not empiricism, and must not be judged by

failure when our remedies have been prescribed loosely upon empirical data alone.

Typography, paper, and binding are of the usual excellence to which we are accustomed in the books of these publishers.

J. L. M.

VEASEY'S OPHTHALMOLOGY. DISEASES OF THE EYE. A Manual for Students and General Practitioners. By CLARENCE A. VEASEY, A. M., M. D., Demonstrator of Ophthalmology in Jefferson Medical College, Philadelphia. 12mo. 410 pages, with 194 engravings and 10 full-page colored plates. Cloth, \$2.00, net. Lea Brothers & Co., Publishers, Philadelphia and New York.

The best eye manual we have seen. A handy volume, attractively and well bound, prettywell printed, with fair illustrations; clearly, concisely, conservatively written and very well arranged. Beyond a few unimportant typographical errors we have practically no criticisms. The treatment is well up to date—including argyrol, but omitting chloretone and dionin; the former is better than morphine to induce sleep in painful conditions and the latter (instilled) is invaluable to relieve neuralgic and intraocular pains. The formula of Panas' solution leaves us in doubt which iodide of mercury to use.

J. L. M.

THE INTERNAL SECRETIONS AND THE PRINCIPLES OF MEDICINE.—By CHARLES M. DE SAJOUS, M. D., Fellow of the College of Physicians of Philadelphia; member of the American Philosophical Society, the Academy of Natural Sciences of Philadelphia; Knight of the Legion of Honor and Officer of the Academy of France; Knight of the Order of Leopold of Belgium; formerly Lecturer on Laryngology in Jefferson Medical College, and Professor of Laryngology and Dean of the Faculty in the Medico-Chirurgical College; formerly Professor of Anatomy and Physiology in the Wagner Institute of Science. Volume First. Pp. 800, with 42 illustrations. F. A. Davis Company, Philadelphia, 1903.

One of the most fascinating books we have opened for years; without it no physician's library is complete, and no one unfamiliar with its contents is up-to-date. It has been the author's design to collate the necessary elements in the development of the various branches of medical science for a more solid foundation than medicine now possesses. Tissue respiration is the dominant factor of all the problems he hoped to solve. The

marked affinity for oxygen of adrenal extractives directed his studies to the physiology of the ductless glands as affording elements for future labors which in turn may lead to a new era in practical medicine.

The secretion of the adrenals was traced as far as the pulmonary alveoli, but not beyond. The oxygen-laden adrenal secretion, an oxidizing substance for which Sajous suggests the name *adrenoxin*, dissolved in the plasma of the blood, carries on all the oxidation processes of the organism; the blood corpuscles being secondary factors. Adrenoxin corresponds to Lepine's "glycolytic ferment," and to the "oxidation ferment" of Schmiedeberg, Jaquet, Salkowski, Abelous and Biarnés.

Various structures, of hitherto unknown function, are plasma channels: the axis cylinders of all nerves and the dendrites of neurons were found to contain a fluid identical to blood-plasma in its reactions to staining fluids. Even the neuroglia-fibrils asserted their identity as plasma-capillaries, the neuroglia felt-work of the substance of the brain and cord representing the intrinsic circulation of these organs. The muscular contractile structures and the various glandular organs allow the free circulation of this oxidizing plasma, the red corpuscles passing on in the larger channels. [Lionel S. Beale, thirty years ago, taught this, virtually.—J. L. M.] The heart-muscle is an exception; contraction of the heart walls is due, in great part, to adrenoxin, which penetrates the heart substance by way of the Thebesian foramina as well as from the coronary arteries.

Adrenoxin combines with myosinogen in muscles, liberating the mechanical energy required for a given muscular contraction, the nerves only inciting and governing muscular function. In the nervous system the immanent source of functional energy was found to be the myelin, or white substance of Schwann, its active constituent being lecithin, composed mainly of hydrocarbons and containing considerable phosphorus. This myelin was not only found to surround the axis-cylinders of all nerves, but also to line the inner surface of the dendrites of neurons and to form the ground-substance of their cell-body. It thus became apparent that the entire nervous system was built upon the same plan: *i. e.*, cylinders containing oxygen-laden plasma surrounded by a layer of myelin, and that the reaction between these two bodies served to form and liberate nervous energy.

Investigation then showed that the adrenals were directly connected with the *anterior pituitary body* through the solar plexus, the splanchnic nerves, and the cervico-thoracic ganglia of the sympathetic. Indeed, this diminutive organ, hardly as large as a pea, and now thought to be practically functionless, proved to be the most important organ of the body, as governing center of the adrenals, and, therefore, of all oxidation processes, increasing metabolism and the activity of all functions.

In general diseases what has been termed the patient's "vitality," or "vital resistance," thus became ascribable to fluctuations in the anterior pituitary body's functional efficiency.

The physiological purpose of the thyroid gland was found to be the sustention of the functional efficiency of the anterior pituitary body up to a certain standard by means of its secretion: iodine in organic combination. Excessive production of this secretion, by causing overstimulation of the anterior pituitary body, gave rise, when prolonged, to "exophthalmic goiter;" while reduced production, by inhibiting the functions of the anterior pituitary body, caused myxœdema. The autonomous adrenal system consists of the thyroid gland, the anterior pituitary and the adrenals.

In his enthusiasm Dr. Sajous has convinced himself that symptoms of infection or poisoning are all manifestations of overactivity or insufficiency of the adrenal system, and that the physiological action of remedies was also traced to the anterior pituitary body, the governing center of this system." The majority of drugs, toxins, physiological toxalbumins, etc., stimulate the adrenal system, when their proportion in the blood does not exceed a certain limit, and when this limit is exceeded, *i. e.*, when the dose administered, or the amount of toxins secreted by bacteria, etc., is excessive, it either inhibits or arrests the functions of this system. A large dose of quinine may, for instance, cause adrenal overactivity, a flushed face, a bounding pulse, etc.; but, if the dose is excessive, it will overwhelm the adrenal system, the signs of which are always similar, *i. e.*, pallor, a weak and rapid pulse, etc.

The *posterior pituitary body*, or infundibular lobe of the hypophysis, was found by "us," thanks mainly to the investigations of Berkley, Andriezen, Howell, and de Cyon, to stand second in importance only to its mate, the anterior pituitary body. Indeed,

it proved to be the *chief functional center of the nervous system*, its numerous groups of neurons forming the starting-point, or highly specialized center, of a single class of nerves. The posterior pituitary body also proved to be the center upon which all emotions, shock,—physical or traumatic,—and kindred sources of excitement or depression react, impairment of its functions accounting for the pathological phenomena now ascribed to such causes. Again, as the general center of the nervous system, it was found to be the anterior pituitary body's co-center in sustaining the cellular metabolism of all organs. While the anterior pituitary body insured oxygenation of the blood through the adrenal secretion, the posterior pituitary body adjusted and governed the functional activity of all organs through the nervous system.

The secretions of the *pancreas* and *spleen* unite in the formation of a powerful proteolytic ferment which plays a leading part in all immunizing processes, its main function in the blood stream being to destroy toxic albuminoids. The portion of trypsin which passes as an internal secretion through the splenic into the portal vein, digests bacteria in the digestive vacuoles of phagocytic leucocytes.

The white blood corpuscles supply the agencies that combine with adrenoxin to insure the continuation of life and the efficiency of all organic functions. [Beale's bioplasm, again.—J. L. M.]

The three varieties of leucocytes (all others being immature cells) are (1) *Neutrophiles* (wandering phagocytes) form and distribute peptones, myosinogen, and fibrinogen; (2) their daughter cells, *eosinophiles*, separated from them in the liver, form hæmoglobin; (3) *basophiles* form myelin and distribute it throughout the nervous system.

Special pharmacodynamics and "physiological pathology" [*sic*] will be considered in the second volume, which will appear in a few months. J. L. M.

BIOGRAPHIC CLINICS. The Origin of the Ill-health of De Quincey, Carlyle, Darwin, Huxley and Browning. By GEORGE M. GOULD, M. D., Editor of *American Medicine*; author of "An Illustrated Dictionary of Medicine, Biology, etc.;" of "Borderland Studies," "The Meaning and Method of Life." P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, 1903. Pp. 223, with a portrait of Thomas De Quincey. \$1.00, net.

A very interesting attempt to study the medical facts of the lives of these five illustrious Englishmen, to see what relation all

of the man's diseases bore to his life and his sociologic conditions. These cases concern one class of symptoms and one disease-producing factor—eye strain, “its subtle and astonishing influence upon character, upon literature, and even upon history.”

In De Quincey's case exophoria seems without doubt to have been present, and Dr. Gould claims that he must have had myopic astigmatism.

“Carlyle's opinion of the medical profession was, so far as concerned his own case, entirely justified and justifiable. . . . There is no working hypothesis except that of eye strain that will explain all these things.”

Dr. Gould does not agree with Dr. W. W. Johnston's diagnosis of neurasthenia, but argues cumulatively that eye strain was the underlying cause of Darwin's ill-health, and asserts that compound hyperopic astigmatism will alone explain the mystery.

Our author is “certain” that Thomas Huxley had compound hyperopic astigmatism (“at least of one or two diopters”), probably with anisometropia, perhaps heterophoria, “and almost certainly he had good or normal acuteness of vision of the two eyes.” [!]

Robert Browning's trouble was astigmatism, “that it was hyperopic is extremely probable, and it must have been of a high degree.”

Chapter VIII is a history of astigmatism and eye strain in which he writes: “The term astigmatism was first used by Rev. Dr. Whewell to designate the effect described by Airy.” In order to be historically complete and scholarly, and in common fairness to Dr. Georges Martin, Dr. Gould should have at least alluded to the correction of Dr. Whewell's error by the substitution of the terms astigmatism and astigmatic proposed by Dr. Martin in the *Annales d'Oculistiques*, for December, 1895. It is to be regretted that Dr. Gould has not thrown his powerful influence in favor of these more scholarly (new) terms.

J. L. M. }

THE JOURNAL OF OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY.

EDITOR,

JOHN L. MOFFAT, M. D.

ASSOCIATE EDITOR,

A. W. PALMER, M. D.

EDITORIAL.

OFFICIAL ORGANS.

THE practice of designating a particular journal as the official organ of a society, giving it the first right to all papers read before that society, seems to be spreading.

Probably because this is the cheapest way to publish the transactions and because the editor—aside from the advertisement (and demonstration of political influence)—is assured of a particularly definite amount of copy, thus saving time, work, and, in some instances, worry.

But many editors even yet prefer to exercise their own judgment as to what appears on their pages and refuse to bind themselves to the publication of any paper the society may choose to accept.

We venture to suggest that the name of its official organ be always published on a society's programs, in order that other editors may avoid trespassing upon that journal's preserves. These violations of editorial courtesy are often—may we not say usually?—excusable on the ground of ignorance.

Such a request for a paper may be complied with by the writer through carelessness, or from a desire to have it more widely read, or maybe from partisan enmity or personal grudge against the editor of the official organ.

Simultaneous or consecutive publication of a paper in two journals is a practical confession that there is at least one journal too many.

Without attempting a complete list we note that the official organ of the Amer. Hom. O., O. and L. Society is the *Hom. Eye, Ear, and Throat Journal*; of the Western O. and O.-L. Association is the *Laryngoscope*; of the California Hom. Society is the *Pacific Coast Jour. of Hom.*

THERAPEUTIC SUGGESTIONS ON THE EYE, EAR, NOSE, AND THROAT.*

J. IVIMEY DOWLING, M. D., O. ET A. CHIR.,

Albany, N. Y.

A RECENT issue of *American Medicine* contains the following editorial:

"As regards therapeutics, how common it is to find practitioners divided into two classes, those whose practice runs to treatment almost exclusively regardless of diagnosis, and those whose interest in a case at once ceases so soon as a diagnosis is made. Medicine exists not for the benefit of its practitioners, but for the good of its patients. In a recent set of ten examination questions for a graduating class by a professor of the "Practice" of Medicine, only one had any reference whatever to treatment. On the other hand, 'What do you prescribe in a case of——?' shows the silliness of another extreme. But why should civilized men run to either extreme? If stolid empiricism and indiscriminate drugging characterize the one set of extremists, a brutal and immoral therapeutic nihilism is equally disgusting. The patient does not come to us and pay us for our theories and diagnoses, but to be made well. He knows, and we all know, that drugs have power, and, intelligently used, have power for good. A correct diagnosis must precede correct treatment, but a correct diagnosis does not do away with the need of treatment. There is a deal of anti-nonsense being scattered about, not only by the ranting quacks, but by many so-called "leaders" of the profession. Hygiene, nursing, diet, etc.—yes; but why not drugs also, if they can help? And help they can when used with skill. The practitioners of the future will unite both theory and practice, both diagnosis and treatment. Let the extremists take warning."

* Presented to the New York State Homœopathic Medical Society, February, 1903.

The truth of the above statements is evident and applies equally to affections of a systemic nature and those of special parts such as the eye, ear, nose, and throat. So it is my purpose to indicate briefly some of the therapeutic measures of proven value in the care of disturbances affecting the special sense organs named. As stated in the editorial: "The patient does not come to us and pay us for our theories and diagnoses, but to be made well;" hence we ought to be conversant with every therapeutic measure that may prove helpful in combating the ills that flesh is heir to.

Therapeutics of the eye, ear, nose, and throat is a complex study and may be considered from several standpoints, viz.: local and systemic, medicinal and mechanical. A given ailment may sometimes be speedily relieved by a single method or a combination of all.

Some of the useful local therapeutic assets are sprays, ointments, and lotions, and through these agencies we are enabled to afford temporary relief and pave the way to permanent cure. Systemic therapeutics is a natural corollary to local medication, and knowledge of drug action and of dietetic measures is necessary to secure the best results in the treatment of local affections.

Mechanical therapeutics is less familiar to the general practitioner, but is a most important factor for the relief of various ills. Through its proper application we are enabled to cure headaches, vertigo, biliousness, and other symptoms through the medium of correcting lenses for refractive error. Also the galvanic electric current relieves and cures the several annoying, and eventually serious, symptoms resulting from stricture of the lachrymal canal and Eustachian tube. Electricity is also of service in the cure of lupus and epithelioma involving the ears, nose, or eyelids, and the X-ray has proven as serviceable in these local conditions as in the more extensive forms involving other parts. Surgical therapeutics is truly mechanical and proves successful according to the skill of the operator in the selection of proper cases and his technique. Many conditions may be relieved through this means after failure of all other measures, for instance, in the use of iridectomy for the relief of glaucoma and extraction of cataract for restoration of vision.

An illustration of mechanical therapy, pure and simple, is in the relief of deafness after the removal of impacted cerumen from the external auditory canal. The benefits accruing from

this procedure are immediate, and are often spoken of as "brilliant cures" by the patients who have profited as the result of their physician's knowledge of cause and effect and also the means at hand for securing relief.

Impacted cerumen may be suspected in any case of sudden deafness, or even that which is the outcome of slow progress of months. Then other symptoms that should direct attention to the ear, and may result from a foreign body or collection of wax, are distressing head noises and also cough which has resisted careful remedial and local treatment of other parts. The technique requisite for the successful removal of inspissated cerumen is a fine art well worth acquiring; in the hands of the skilled aurist it is a comparatively simple procedure, and is a therapeutic measure that should be in more general use among general practitioners. The dexterity indispensable to the correct use of this peculiar mechanical therapeutic operation presupposes familiarity with the use of reflected light, head-mirror and aural specula; and the armamentarium essential for the purpose is simple indeed, for an ordinary fountain syringe may be used, but better and quicker results are obtained from the use of the piston-syringe. The most serviceable solution for dislodging the mass is prepared with warm sterile water to which are added a few drops of some good liquid soap and bicarbonate of soda in the proportion of thirty grains to the ounce of solution. Some receptacle for catching the returning solution should be placed under the ear; the ordinary pus basin may be used, or one of the several metal cone-shaped devices which hook over the auricle and to which is attached a hose of rubber tubing to convey the returning flow and detritus to some conveniently placed receptacle. This latter contrivance expedites the procedure by doing away with the necessity of emptying the container every few moments, and also lessens the possibility of wetting or soiling the patient's wearing apparel, which contributes to the elegance of the operation and comfort of the patient, although it is not essential for the success of the operation. Only moderate force should be used in directing the solution into the canal, and if the patient complains of dizziness it is wise to desist for the time, and on continuing the process the force of the current should be lessened. After accomplishing the desired result the canal should be carefully dried and a pledget of cotton or wool placed loosely in the canal, which is to be removed within a few hours. In case the offending collection of wax is of special density and

fails to yield to the described method, it is safest to soften the mass by the instillation of enzymol. If necessary this solution should be instilled every ten minutes for an hour or even three times daily for several days, and permitted to remain in contact with the wax for five or ten minutes at each instillation, by the use in the canal of a cotton pledget. After a period of an hour or sometimes several days a repetition of the syringing process will be rewarded by the dislodgment of the offending body.

The use of the curette is not advocated because of the possibility of injuring the tympanic membrane or walls of the auditory canal and in the first mentioned accident middle-ear suppuration is possible; a likely sequel of the latter mishap is a circumscribed inflammation of the external auditory canal, otherwise known as furunculosis, which is a most painful affection and frequently recurrent. The best means of relieving this condition is dry heat and the internal administration of calc. picrata 6x. Whenever the curette is used, however, it is important to be sure that the instrument is sterile, and the canal should be previously treated antiseptically.

The use of electricity in its several varieties is now a recognized and valuable therapeutic aid in the treatment of systemic diseases; during more recent years its usefulness as applied to disorders of the eye, ear, nose, and throat has received considerable attention. It is a *sine qua non* to the specialist and prized for its surgical and mechanical application; with many it is of daily service.

It is well known that scientific physicians were slow to believe in the value of this mysterious agent and for years it proved the open sesame for the profit of charlatans, and so it is but right to honor those who have finally succeeded in winning professional recognition for their "friend in time of need."

Among the many unselfish men who acquired intimate knowledge of this active power for the relief and cure of disease and who freely gave to the profession at large the results of their experience, a few names stand out pre-eminently. We readily recognize the ability and undying work of Scheppegegrell of New Orleans, Wm. Harvey King of New York, and Roentgen, who stands alone because of his discovery of the X-rays.

The galvanic current is the most valuable form to the specialist, although faradism, static and X-rays are proven friends, and also the heating power as applied to the cautery is well known. The special value of galvanism has recently been revived by

Duct of New York; its service in overcoming strictures and even a general hypertrophic condition of the Eustachian tubes or lachrymal canals, is now widely accepted. Deafness, head noises, and vertigo are the bugbears of the aurist, but if due to stenosis of the Eustachian tubes these may often be quickly relieved through the power of the galvanic current to overcome such conditions. Likewise the oculist finds in it the most positive and least painful method of benefiting occlusions of the lachrymal canals and the resulting symptoms of epiphora or lachrymal abscess.

I know of nothing that will satisfactorily replace this powerful agent, but it should only be used by those who thoroughly understand the anatomy of the canals in question. Given such knowledge, the necessary technique requires for treatment of the Eustachian tube the correct placing of a Eustachian catheter and, as generally accepted, either an insulated silver or rubber instrument. But my experience corroborates Geo. W. McDowell's teaching that insulation is not necessary to the success of the undertaking. With some patients the physician can assure himself as to the proper position of the catheter by examination of the pharyngeal vault with the aid of a mirror, but whether this is possible or not, the patency of the tube should first be ascertained by the use of gentle inflation and determined by the operator with the auscultation tube. Then the patient should evenly hold the positive moistened sponge electrode in the hand and a gold bougie attached to the negative electrode should be introduced and gently passed into the tube until a stricture is encountered, at which time the current is applied with a voltage of 35 to 40 and from 2 to 3 ma. With gentle pressure the bougie passes and continues until again blocked, when a short pause will again be rewarded with the further passage of the probe, and it should continue until it enters the tympanic cavity in order to prove successful. From time to time larger bougies should be used until the tube is freely patent, and relief of the distressing symptoms obtained.

The oculist obtains like pleasing results in the treatment of similar pathological states of the lachrymal canal and employs the same technique, but replaces the gold bougie with the proper-sized Bowman probe.

It is of decided importance to remember that the negative pole of the galvanic current relaxes and promotes gradual absorption of strictures wherever found and it should always be attached to the probe which is introduced into the canal;

the positive pole is applied to some distant part, such as the hand.

Local therapy, as applied to these special organs, is governed by the same principles which apply to general surgery and suggest the proper selection of germicides, desiccants, stimulants or cauterizing agents.

The various germicides are so well known and appreciated that the mere mention of the class is sufficient in an article of this nature. However it is well to remember that they are of the same value in the preparation of special operative cases as in general surgery, and the surgeon whose technique is most thorough will be rewarded with the greatest success in the operative procedures on the eye, ear, nose, and throat.

Desiccants are of special value when used subsequent to intra-nasal surgery or insufflated on the pharyngeal walls after control of hæmorrhage subsequent to an adenotomy, and in the latter instance the tendency to excessive granulation of the denuded pharyngeal area is lessened. They are also beneficial in excoriation of the external auditory canal, and also in suppurative conditions of the middle ear and particularly if complicated with granulations on the tympanic walls. Whenever powders are used in the external auditory canal or tympanum they should be employed most cautiously and merely dusted lightly over the diseased area by means of an easily controlled powder blower. In these locations powders should never be employed to the extent of concealing the distinguishing landmarks, and in the event of a diminutive perforation of the membrane, resulting from middle-ear suppuration, it is well to exclude the use of powders as part of the treatment.

Even in this day of scientific and more scholarly attainments of the vast body of medical practitioners, an ear case will occasionally come under the observation of the aurist in which the suppurative discharge from the tympanic cavity has been temporarily controlled by the actual packing of the external auditory canal with some drying powder. For the moment the result is pleasing to the patient, but such method would only be equaled by blocking the safety-valve of a steam boiler, and in both instances the safety vent for the constantly developing excess of power for damage is sealed, and the natural corollary is explosion of unknown force, but certain to effect some more or less extensive injury; for the forces of nature are alike, whether applied to the field of mechanics or to the processes of animal destruction and its subsequent repair.

When considering the proper care of suppurative diseases of the middle ear, its gross anatomy should be borne in mind and then the error of packing the external auditory canal with powder would not be committed. The only natural exit from the middle ear is by means of the Eustachian tube; in a healthy state this permits the proper drainage of the mucous accumulation, but in the event of suppuration within this cavity the character of the tissues lining the tube is changed because of the resulting swelling and presence of plastic exudates which affect the patency of the canal.

Should such blocking of the natural safety vent of the tympanum exist coincident with the occlusion of the artificial perforation (or safety vent) in the membrana tympani through filling the external auditory canal with powder, the excess of pus will seek its exit through the path of least resistance and mastoid involvement is a possibility, and surgical interference not unlikely. This but lightly pictures the possible serious dangers incident to the excessive use of powder at such times, and should suggest the wisdom of caution in caring for these diseased conditions.

The powders that serve me best are aristol, acetanilid, bismuth-formic-iodide, boric acid, and iodoform.

Local stimulation is beneficial in some instances; among the most useful is tincture of iodine applied to indolent corneal ulcers; this also proves helpful in chronic suppuration of the middle ear with considerable destruction of the tympanic membrane and if the walls of the cavity are covered with easily-bleeding granulations. Silver nitrate fused on the end of a probe, and chloride of iron are particularly useful in controlling epistaxis when originating at the lower anterior portion of the septum, which by the way is the point from which the majority of nasal hæmorrhages originate. Before applying these preparations the nose should be as carefully dried as possible and the bleeding points lightly touched with the selected preparation. In event of these failing, the cautery is serviceable when used at a dull heat, the so-called cherry red.

The usefulness of local therapy of a mechanical nature is well illustrated by reference to the following cases, the first a young lady, giving a history of headache extending from the frontal region back to the occiput, burning and smarting of the eyes, wrinkled forehead, and nausea, these symptoms having been continuous for three full months. Examination showed slight compound myopic astigmia of the right eye and simple

hyperopia of the left; a prescription for correcting glasses relieved the entire train of symptoms and has enabled the patient to complete in comfort her college course, which at one time it seemed necessary to shorten.

The second case illustrates the necessity of a knowledge of the pathological condition to obtain a successful prescription. Headaches had been relieved with glasses, but after a period they returned and one day the patient, Mr. J., called and said: "Doctor, my glasses need changing, for the same old pain has returned and for three days I have been nearly wild." The glasses were correct, so I sought for some other cause and found it in an acute frontal sinusitis, worse on the right side. Local spraying with alkaline solutions and shrinking of the tissues with adrenalin chloride permitted me to cleanse the sinuses, and within one-half hour my patient's headache was gone. A continuance of daily local treatment and the use of an oily spray resulted in permanent relief.

The spray I am partial to is as follows:

R.	Tr. Iodine.....	gtt. v
	Menthol } aa	gr. v
	Camphor }	
	Thuja oil.....	℥ j
M.	Sig. Use twice daily after cleansing nose with watery solutions.	

In addition to the above treatment I prescribed *pulsatilla* 3x with benefit.

Among the newer remedies there is none more important than adrenalin chloride, through the use of which nasal operations are now bloodless. So much has been written concerning this product that I will merely mention that its use is sometimes disagreeable to the patient, for I have had several experiences with acute rhinitis resulting from the 1 to 1000 preparation and on one occasion from a solution of only 1 to 5000; also in one instance a superficial slough followed its employment within the nose. However, its benefits far exceed its ill-effects.

Were it not for surgical and simply mechanical therapy the specialties of the eye, ear, nose, and throat could hardly exist, but granting that, those of us who limit our practice to this class of work are constantly reminded of the greatness of the immortal Hahnemann, for through his investigations and scientific study of drug action our school of practice is enabled to boast of specialties within specialties; we have homœopathic

specialists of the eye, ear, nose, and throat, and this article would not be complete without reference to a few of our proven drugs which are in daily use.

Some of those which are most useful and in which I have unbounded confidence are:

Pulsatilla 3x for stytes of either eye or lid. Given before suppuration it will abort fully ninety per cent. Hepar sulphur 6x is a serviceable complementary remedy.

Calcareo picrata 6x quickly relieves boils of the external ear, provided there is no persistent mechanical irritation.

Eserin 3x was introduced into our practice through the investigations of N. L. MacBride of New York; it is valuable for twitching of the eyelids, soreness of the eyeballs, dimness or blurring of vision after using eyes in reading, pains over eyes, in vertex or occiput; the keynote being aggravation by use of eyes.

Sulphur 3x is a grand remedy and completes the cure of many a stubborn eye, ear, nose, and throat affection. It is useful after failure of other remedies and especially beneficial in blepharitis in which there is a moist crusty condition of the lids, for continued suppuration of the middle ear in scrofulous children, or chronic rhinitis due to intra-nasal irregularities superimposed upon a debilitated general condition. If with any local affection of the special organs under consideration there is any skin lesion which is aggravated by ointments or water, this remedy may be prescribed with added confidence. Its sphere of action is wide and it rarely fails when indicated.

Baryta carb. 2x is of proven value in those of the quinsy habit, if given before the onset of the suppuration.

Baryta iodid 3x I consider a most reliable remedy to be used after the removal of adenoids, and its use should be continued over a period of months.

An investigation of the action of these few remedies would lead the skeptic to further research and win to our ranks those who scoff. However the statement made in an earlier paragraph should be remembered, viz.: First, seek the cause of the existing disorder, study its pathology, and after obtaining a thorough and comprehensive knowledge of the case prescribe the remedy, which will then prove of unfailing value.

CARBOLIC ACID FOR CORNEAL ULCER.

ALTON G. WARNER, M. D.,

Brooklyn, N. Y.

Pure carbolic acid has been of value in treating a number of cases of corneal ulcer. One of the most interesting, because of its severity, is the following:

The patient, a man about fifty years of age has had several previous attacks of ulcer, always marginal. These have been comparatively mild and have yielded readily to rest and homœopathic remedies. When the last trouble began he was out of town, and as he could not reach me at once, went to a local oculist, who gave him careful treatment. Failing to improve he returned home and presented himself at my office.

I found a marginal ulcer extending nearly halfway around the cornea.

I ordered the treatment that had always been successful in the past; Eserin, a bandage, rest in bed, and hepar sulph. The next day he sent me word that he was worse. I sent him to the hospital and saw him in the afternoon. Upon examination I found that the ulcer had extended entirely around the cornea. A cotton swab was rolled fairly hard upon an applicator and tapered at the point. This was dipped in pure carbolic acid and the entire base of the ulcer touched. The only other treatment was irrigation with normal saline solution every three hours and calc. hypophus. i every three hours.

In two days there was great improvement and in two weeks the patient was discharged cured. There was considerable corneal scar, but as this is at the periphery it does not interfere with vision. In most cases I use cocain or eucain to lessen the pain of the application, though as the carbolic acid is anæsthetic the pain soon passes off. Care should be used in making the application so that there is no excess of acid to run off.

19 Schermerhorn Street.

ASPIRIN FOR DISEASES OF THE EYE.*

DR. HANS KIRCHNER,

Bamberg.

Corroborating the favorable testimony of others, I have found aspirin a satisfactory substitute for the salicylates for the numerous patients who are unable to take the latter. It is not inferior to them curatively, and no deleterious effects have followed large doses of aspirin even among those who have a decided idiosyncrasy against preparations of the salicylates.

In acute iritis, after natrum salicylatum had failed as well as salol, much smaller doses of aspirin were immediately followed by cessation of pain and diminution of inflammation and swelling. In the height of the inflammation 2 to 1 gr. evening, or 1 gr. evening and morning sufficed. One-half gr. given toward evening produced in severe cases amelioration, mild perspiration and soothing sleep.

The value of aspirin is not confined to rheumatic ailments; it has served me extraordinarily well in severe cases of iridocyclitis which could not be traced to a cold. I will cite a case.

A letter-carrier, aged forty-eight with a large family, had unripe cataract: cortex still clear, small diffuse clouding of the nucleus; V. [under very bad conditions] right, fingers at $\frac{1}{2}$ m.; left, $1\frac{1}{2}$ m.

April 29 I performed iridectomy in both eyes and very energetic massage of the lenses with the heel of a strabismus hook. Great swelling of the lenses with severe irritation of the ciliary bodies ensued; the least touch near the ciliary body made him draw his head back. R. Scopalamine-cocain.

May 9. Ciliary regions no more sensitive; lenses rapidly becoming cloudy.

* Translated from *Die Ophthalmologische Klinik*, September 20, 1901.

May 20. Extracted right lens with escape of much watery vitreous.

June 4. First renewal of bandage; wound healed, never painful.

June 5. Severe ciliary pain set in, relieved by three drops of scopolamin-cocain, but ever returning after a few hours, requiring the instillations to be kept up at night. No exudate in the pupillary region, no cortical remnants. As the remissions became shorter a drop of atropin was instilled and the remissions became considerably longer.

June 19. I extracted the left lens without mishap, cortex and nucleus coming away with ease. As was to be expected, under double bandage, severe pain in the right eye was felt after twelve hours which was relieved with mydriatics, but only for a few hours; gradually the pain increased and involved the whole right side of the head, the left side was free from pain. On account of the patient's restlessness the anterior chamber was not restored on the fourth day, so I kept him in bed, but the pain became unbearable and I administered 1.0 gr. aspirin repeated in three-quarters of an hour. The effect was marvelous; shortly after the first powder the pain became considerably less, entirely ceased after the second, and to this day there has been no recurrence. The patient remained on his back and had 1.0 gr. aspirin night and morning. On the sixth day the anterior chamber commenced to refill. July 6, discharged. R. V., 5-12. L. V., 5-6 fluently. Niden Nr. 1.

The curative effect of aspirin in this and similar cases is remarkable; 2 gr. of aspirin entirely relieved without recurrence such severe ciliary pain as to cause the man to writhe, and probably saved this left eye.

August 28 he resumed work, correcting glasses giving him complete far and near vision.

Cyclitis, and irido-cyclitis.—After other antiphlogistic means had failed, one dose of aspirin wonderfully relieved the pain and inflammation which, under repeated doses, was entirely cured.

I found no appreciable benefit from aspirin for the inflammatory pains of scleritis, nor in a case of abducens-paralysis nor in one of trochlear paresis which was probably rheumatic.

In several cases of iritis serosa aspirin acted well. The irritation disappeared faster and in one very severe case with dense lens opacities [Glaskörpertrübungen] and broad syn-

echiæ a remarkable absorption of the exudate followed its administration.

I think it justifiable to give this remedy in other cases of lens opacities as it has excellent action in resorption of serous exudates.

From the foregoing we see that it is an excellent remedy for neuralgia. Symptomatically it acts well in supra-orbital neuralgias, for which I have used it very frequently; fresh cases healed quickly, in old ones the attacks became less frequent and severe and in some were permanently cured.

Also headaches, where the causes were distinctly traceable, were promptly relieved by aspirin, in many instances after other means had been tried.

As a rule 1 gr., sometimes 1-2 gr., will suffice to relieve pain entirely; more than 2 gr. was never necessary.

It should be tried in hopeless cases with severe pain. For instance: I had a case in the left eye, exophthalmos, irido-dialysis, calcareous cataract; right eye, enophthalmos, luxatio lentis [traumatic in youth]; both sides chorioretinitis, many years entire blindness, many years of severe pain. The left eye was enucleated but still there was severe pain; aspirin was given with great relief; morphin could not be given continually.

Eye troubles complicated with diseases of other organs. A young woman had severely inflamed eyes without improvement for over five weeks on account of severe coryza; I gave her aspirin, the next morning the eyes could be opened, they continued to improve, in a short time she was cured and able to attend to her duties.

My extended experience assigns to aspirin a prominent place in ocular therapeutics of cases traceable to rheumatic causes, especially in iritis, irido-cyclitis and cyclitic troubles due to other causes. Independent of its anti-rheumatic operation aspirin occupies a prominent place as a soother of pain, especially in trigeminal neuralgias, headaches, and incurable cases where it would be dangerous to give morphin.

It is not soluble in water, hence is best given in powder. If taken in a little lemonade or in water acidulated with a few drops of hydrochloric acid [Salzsäure] it will be dissolved mostly in the intestines or alkaline tissues.

THE EYE IN CHILDHOOD.

BURTON HASELTINE, M. D.,

Chicago.

One of the finest things about present-day medical practice is its conservatism. By this is meant, not a reluctance to adopt new ideas or to change established methods, but the conservatism that makes for preservation rather than destruction, for developing functions rather than dispensing with them, and for preventing abnormalities rather than waiting to correct them when established.

The sanitariat is unquestionably the physician of the future, and indeed he already seems to have the center of the stage.

The surgeon, who at one time seemed to apply the scriptural advice about offending members to almost every organ of the body, is growing less blood-thirsty and now claims as much credit for the saving of an organ as for the ablation of it.

Conservatism, then, in its truest sense should be the ideal of all medical and surgical practice and to us the question presents itself: How can we as oculists best manifest conservatism?

Have we to-day anything better to offer the possessor of an offending visual organ than the scriptural advice to pluck it out? We surely have.

In most cases we are not even obliged to say: Leave it alone and get along as best you can.

We can do better than that and paraphrase the classic sentence by saying: "If thine eye offend thee, teach it to do better." For the teachableness of the visual apparatus is wherein lies our opportunity and it is this thought that leads us to a consideration of the eye in childhood.

We are prone to regard the eye as stable in its form and function, whereas throughout childhood it is a developing organ, readily susceptible to varying influences, and remain-

ing even during adult life to some extent changeable. Indeed all the phenomena of vision are in a sense educational, the eye at birth being practically functionless.

It is true that the infant's eye shows light reflexes and that strong light seems to be unpleasant, but the actual use of the eyes for vision does not occur until the babe is two or three months old. Co-ordinate action of the eye muscles is usually established by the end of the third month, but the intelligent recognition of visual impressions is a development considerably later than this. It is apparent, then, to what an extent the sense of sight is a result of the experience of the individual.

Along with a better knowledge of the development and the physiology of vision has come a vast improvement in our ability to deal with its abnormalities. So great is this advance that much of what was once considered fairly good practice must to-day be condemned as unpardonable neglect. Especially is this true in the abnormalities of early life.

In adults the importance of ocular hygiene has for some time been recognized and the relation between ocular and general health has been fairly well understood. Eye strain as a causative factor in headache, neurasthenia and the allied disorders of grown people has perhaps received sufficient attention. But with children, especially those too young to complain intelligently, it is still too fashionable to ignore the eyes or to put off attending to observed defects in the hope that the patient will outgrow them. The tendency in such neglected cases is not toward the normal but away from it and the result is apt to be ruinous to all hope of perfect function.

This is well illustrated by a case at present under my care. The patient, a girl of twelve years, came to me with a constant divergent strabismus of the right eye. This had first been noticed six years before as an occasional deviation showing when the child was sick or very tired. Her physician had advised letting it alone, saying that she would outgrow it and the child was even allowed to go to school. Complete loss of binocular vision was the result and the deviating eye could only see 20-80 with —.75 D. Cy. axis 90°, which fully corrected the refractive error. It is of course impossible to say whether vision in that eye had ever been more, but in six months with the correction and daily exercise it improved to 20-40, proving pretty clearly that it either had been better or would have been with proper care. The deviation is still pronounced and an operation, perhaps several operations, will be necessary for its

correction, but my experience is that the large majority of similar cases, taken when the trouble is first discovered, may be cured with no operation at all.

As to the proper management of these conditions, let me say without being too detailed, that it chiefly consists of two factors: first, accurate and full correction of the refractive error, and second, faithful and judicious exercise of the defective eye.

Regarding methods of determining refractive errors in children, there is, in my opinion, one method and only one that has any practical value, namely, retinoscopy with the eye under complete cycloplegia. With the amount and kind of error definitely known, it is my practice to give very nearly complete correction, with the one exception of simple hypermetropia in which I only partially correct. But simple hypermetropia causing strabismus is in my experience extremely rare. In almost all cases there is co-existing astigmatism of one or both eyes, or there is a condition of anisometropia. In the former it is often sufficient to correct only the astigmatism if the hypermetropia is small in amount. In the latter I depart from the classic custom and correct each eye almost in full. The accepted dictum on this point has long been that in anisometropia of more than one and one-half or two degrees a full correction cannot be worn. While accepting this for adults, in children I find it to be erroneous. Here again the teachableness of the eye comes to our aid, and by the use of lenses of widely different refractive power we can often develop and retain good binocular function.

The exercise of the deviating eye is not a matter demanding any special skill and can be conducted chiefly by the parents, if they are intelligent. It should not be left wholly to them, however, as they will rarely have the patience, skill, and tact demanded for achieving the best results. The process is a long and tedious one, sorely trying to the faithfulness of all concerned. But the results are ample recompense, and when fully appreciated will leave little room for charity toward the policy of delay or neglect.

One of the reasons for such neglect is undoubtedly a lack of general information as to the progress made during recent years in this branch of ophthalmology. Even physicians, some of them, seem to suppose that the oculist still depends upon subjective tests for the determination of refractive errors. These of course advise waiting in every case until the child has learned to read, by which time, in most instances, great

mischievous has been done. Some even accept the statements of opticians as to whether the eyes are normal, not knowing that many serious defects of children's eyes are beyond the skill of the optician to discover.

It is time, therefore, for us to talk more in our general medical meetings of the work we are doing in this special field. Let it be known that visual defects can nearly all be prevented if early given the benefit of expert care.

Let it be known that modern ophthalmology makes possible the accurate determination of eye conditions in children two years of age, or at least five years before subjective tests are of any value whatsoever.

We are dealing with the special function more constantly employed than any other and this during the most plastic period of life.

Let us therefore emphasize the splendid possibilities of this five years' gain. Properly appreciated and utilized, it means the elimination of all those cases of eye strain resulting in nervous exhaustion which so materially hinder a child's normal development.

It means the loss of much of our skill as muscle cutters, for we shall less often have a chance to practice. And it further means the disappearance of the myth of congenital functional amblyopia, for with the proper recognition of two eyes in every baby we shall no longer need this screen behind which to hide the effects of our former negligence.

100 State Street.

POSTERIOR POLAR CATARACT REVEALED BY TRAUMA.

FRANK B. SEITZ, M. D.,

Buffalo, N. Y.

This case, while rather singular, is not presented because there is anything new in its symptoms, pathology, treatment, or result, but more on account of its illustrating, recalling, and emphasizing, like most papers published nowadays, some already well-known facts.

Miss L., aged 13, came to my office and told of having been hit on the right eye with a stone that had been recklessly thrown by a mischievous boy. The lids were ecchymosed, swollen, and partly closed. The cornea was slightly abraded and somewhat clouded, so a good view of the fundus could not be obtained. The vision of the injured eye equaled counting fingers while that of the left was quite acute, being 20-15.

It seemed like an ordinary case of trauma and was treated as such. Under the use of atropia, a boric acid wash, and cover bandage the eye soon cleared up, but the vision did not improve. It was then discovered that she had what every known test proved to be a posterior polar cataract, which from its large size and location—directly in line with the pupil—must have made it impossible for her to have seen any better before than she did after the accident. This belief was strengthened by the fact that she has a noticeable divergent squint, the primary deviation being in the right, or injured, eye.

This case has two points of interest, the first of which is that the patient is another one of the many who have one apparently good but nearly useless eye; and who, like this girl, do not know that they have but monocular vision. The second point has a medico-legal aspect, for the rather illiterate

mother is positive the girl's vision was perfect in both eyes before the accident; still believes, in spite of my request for an opinion by another oculist, that the injury destroyed the sight of her daughter's eye, and required a great deal of argument and explanation to prove the uselessness of a suit for damages against the father of the boy who threw the stone.

21 North Street.

IRITIS; A COMMON CASE.

E. D. BROOKS, M. D.,

Ann Arbor, Mich.

About two years ago a woman, about twenty-five years of age, slender and delicate, with brown hair and eyes, had me examine her for glasses. I found a slight degree of astigmatism, gave her a prescription for the same, which she had filled at an optician's. In the winter of 1902 she came in contact with a traveling optician, who fitted her to glasses for an attack of iritis from which she was then suffering and which he failed to recognize. Neither did she consult a physician or oculist for her trouble. As the glasses failed to improve the vision and as the inflammation continued to grow worse, her optician, as a good optician should, dutifully changed her glasses at each visit he made to the little burg where she resided. This continued for some months, when the vision became reduced to perception of light and still he changed her glasses again, the last prescription being a slight minus cylinder. At last she consulted her family physician, who recognized the seriousness of the difficulty and referred her to me for treatment. I found the vision light perception, tension normal, cornea quite opaque, pupil almost completely adherent, pupillary space filled with the products of inflammation, iris discolored and muddy, pain and photophobia not marked. I at once began an attempt to dilate the pupil, beginning with a 4-grain solution of atropin and increasing the strength until I was using a saturated solution, alternating a few times with eserine, but to no avail. The superior nasal quadrant was not attached and the pupil became somewhat elongated in that direction. The patient was very tolerant of the atropin and showed no very decided symptoms of poisoning from it.

I then gave up the attempt to dilate the pupil and devoted

my attention to controlling the inflammation, which I succeeded in doing rather promptly. Among other means used to this end was the galvanic current, positive pole over the inflamed eye and negative pole in the hand. As soon as I was certain that the inflammation was subdued, I began an attempt to absorb the deposit in the pupil, by means of the galvanic current, negative pole upon the eye and positive pole in the hand, repeating this treatment every day and then every other day, gradually lessening the frequency of the treatments, and using in conjunction with the current a solution of adrenalin chlorid, one to four thousand, dropped in the eye three or four times a day, together with the internal remedy, selected mainly for constitutional conditions with an occasional intercurrent remedy to stimulate the absorbents. This treatment was accompanied by a very gratifying improvement in the appearance of the eye and in its perceptive power. The conjunctiva and sclera gradually returned to their normal appearance; the opacity of the cornea gradually lessened, being most persistent on the nasal side, and at last became nearly normal in its appearance. A puzzling feature of this opacity was that it seemed to be interstitial; I could get no history of specific infection nor was there anything to indicate such a condition. The iris regained its normal color and appearance except that the pupil could not react to light, while the pupillary space cleared up and the vision improved correspondingly until at present it is a little better than 20-40, after being under treatment a little less than four months. Should she be so fortunate as to escape subsequent attacks of iritis, I anticipate that the improvement in vision will continue up to probably about 20-30.

The patient understands that she is liable to subsequent attacks, and that the vision of the eye may be entirely destroyed, or an iridectomy may be rendered necessary for secondary glaucoma, should the very small segment of iris, now free, become attached.

This case is but a fair sample of the work of the traveling optician, and it seems to the writer that it would be for the protection of the public should these so-called "doctors of refraction" be compelled to take a course in ophthalmology, at least sufficient to enable them to distinguish between ametropia and iritis or any other disease which, if neglected, tends to destroy the vision or the integrity of the eye.

June 15th.—She was in again last Saturday and I found the vision has gone on improving and was nearly 20-30.

The remedies used were mercurius vivus, merc. protiodide, lachesis, sepia, pulsatilla, and kali iod., according to symptoms or supposed pathological conditions.

I used the galvanic current, four dry cells, just enough to be felt on the eye. There is still a slight milkiness of the cornea, worse at the nasal side. Am hoping it will grow less and that vision will yet be nearly normal.

200 S. Main Street.

SYMPOSIUM.

- 1.—*What is your Practice as to the Full Correction of Myopia?*
- 2.—*What your Technique and Results with the so-called Subconjunctival Injections? Have You been able to Make any of them Painless?*
- 3.—*Do you Inflate the Middle Ear upon Bougieing? Why?*

FRANCIS B. KELLOGG (Los Angeles, Cal.): 1.—I have of late fully corrected my myopic cases as measured by retinoscopy. So far I have succeeded in making patients wear the correction. I hope it may do all that is claimed for it.

2.—After a drop of 4 per cent. cocain in the eye, I apply same on a probe and cotton to the point of injection. I use normal salt solution, which I regard as the most efficacious, and when injected slowly, in quantity of 5 to 8 m., it has been practically painless.

3.—Sometimes: to assure myself of successful dilatation.

JAMES A. CAMPBELL (St. Louis): 1.—Depends upon degree. For very high degrees I do not give full correction as a rule; in the lower forms, yes.

2.—No special technique other than the usual manner. It is seldom entirely painless. I have had some favorable results, not many.

3.—Bougieing the Eustachian tube is not a frequent occurrence in my practice. I have done it, and inflate to know whether successful or not—that is the only way to find out.

LEIGH Y. BAKER (Washington): 1.—My aim is to so correct the existing defect that the efforts of accommodation and convergence may be reduced to the minimum; the more closely I can approach the full correction the better I find the result. There are, however, many exceptions to all rules in the correction of myopia. A patient, whose myopia is 5 D.

on repeated measurement, is unable to wear even partial correction after faithful attempts. During a period of ten years there has been no change in his degree of near sight.

2.—I rarely make use of subconjunctival injections, as I do not consider that the results obtained offset the pain and discomfort of the application which, so far as my experience goes, is excessive. When used, I employ the salt solution exclusively, with the idea of hastening resolution.

3.—I consider inflation of the middle ear directly after successful bougieing, as a superfluous measure.

J. M. PATTERSON (Kansas City): 1.—In the young (under twenty years of age) I invariably give the full correction, found after use of a reliable cyclopegic, because it enables the patient's eyes to work under conditions similar to those of emmetropia. In many cases above this age who have never worn full correction for near work, and always in presbyopia, I deduct from full correction an amount sufficient to allow patient to use about two-thirds of his accommodation.

2.—After thorough antisepsis and anæsthesia of the conjunctiva, the point of the hypodermic syringe is inserted six or seven mm. from the corneal margin, and two to four minims of the fluid injected. Results in two cases of irido-cyclitis seemed favorable, but in no cases did I get striking results. All were attended with more or less pain.

3.—If satisfied that I have not injured the tube in the least, I inflate the middle ear, for the same reasons that I inflate if no bougie had been used.

FRANK B. SEITZ (Buffalo): 1.—Astigmia is fully corrected. Myopia is prescribed for as per rule: the weakest glass with which the best vision can be obtained. A myopia of 2 D. or under is usually fully corrected, while that of 6 D. or over, a little less than full; advise a lesser p.p. for those who do much close work.

2.—I first cocainize the eye, so that with a sterile needle there is little danger nor pain, and good results. Some pain is unavoidable; it is not so much due to the incision as to the tension in the conjunctiva from the injected fluids.

3.—Yes, except where some bleeding forbids. Because inflation, or restoring equalized atmospheric pressure to the membrana tympani, is the primary object in most middle-ear treatment.

ISAAC C. SOULÉ (Kansas City): 1.—It is my practice always to give the most complete correction possible in every case of myopia, being especially careful should the case exhibit symptoms of progression. In cases where the patient is under thirty years of age he is advised to wear the correction constantly, for both near and distant work. Where it is advisable to use a weaker lens for near point, separate lenses are prescribed. I do not approve of bifocal lenses for this class of patients. In school children the myopia should be watched carefully and the eyes kept constantly fully corrected.

2.—Do not use them; too much discomfort following their use in proportion to the good they accomplish.

3.—No. Danger of emphysema.

E. H. LINNELL (Norwich, Conn.): 1.—That is a difficult question to answer in a few words. So much depends upon the individual case, the age, amount of myopia, range of accommodation, visual acuity, and character of work. All these factors influence me in my prescription. In children and young persons I consider it desirable to correct the whole degree unless there is some good reason for not doing so. This secures a more natural relation between convergence and accommodation. On the other hand, where the myopia tends to be progressive, I think it is good practice to prescribe such a glass as will require the least amount of accommodation, even sometimes at the sacrifice of some acuity of vision. For instance, I not infrequently prescribe the glass that is required for working distance to be worn constantly. In high degrees of myopia and when the accommodation is defective, or when considerable amblyopia exists, I do not, as a rule, correct the whole refractive error. In middle life, or after thirty years of age, when the myopia has not been corrected in youth, I seldom advise full correction for distance, and practically never for near work.

EDWARD HILL BALDWIN (Newark, N. J.): 1.—I correct myopia fully if the tissues are sound, and if the eye tolerates it perfectly. Under-correction in such cases gives the accommodation no work to do, and seems to me to be bad practice. A mydriatic is always used before giving lenses.

GEORGE A. SHEPARD (New York): 1.—I very rarely give a full correction of myopia at first, except when of low degree.

I have no rule in my practice, for much depends upon the condition of accommodation and convergence.

3.—I do not inflate after passing the Eustachian bougie unless it passes very easily, because of the danger of filling the tissues with air through a break in the mucous membrane.

E. D. BROOKS (Ann Arbor): 1.—I fully correct myopia for distance always, and for reading when the ciliary muscle has been kept developed by the proper correction with concave lenses.

2.—Yes. To restore equilibrium of the air on both sides of the tympanic membrane. The bougie does not necessarily accomplish this.

LEE WALLACE DEAN (Iowa City): 3.—After using the Urbantschitsch bougie I inflate the middle ear unless: (*a*) There is much pain in passing the bougie; (*b*) patient complains of pain in ear; or (*c*) there is blood in the bougie, indicating a puncture of the mucous membrane.

After using the gold bougie with the electrolytic current I do not inflate.

I inflate because after the use of the bougie the tube is best opened, and I then can obtain better results from inflation than at any other time.

JOHN O. ROE (Rochester): 1.—I do not inflate the middle ear when using the electric bougie; but I do when using the Eustachian catheter as a bougie for constrictions at the lower end of the tube.

PRACTICAL HINTS.

Purulent ophthalmia due to gonorrhœal infection generally develops on or before the fourth day. There are cases of purulent ophthalmia neonatorum without gonococci in the discharge from the eye or from the mother's vagina and with no history of gonorrhœa.

The best way to apply cold to the eye is with a small Leiter coil attached to a douche bag that contains ice water; it does not devitalize the cornea as does ice.

In purulent ophthalmia keep the lids from sticking together by smearing their edges with vaselin *from a collapsible tube* or, better, with fine lard that has been washed thoroughly with 1:3000 formalin—it is not absorbed so quickly.

The Credé instillation of 2 per cent. nitrate of silver has caused a persistent and troublesome conjunctivitis. Argyrol 10 per cent. is efficacious and less irritating.

A solution intended for the eye, urethra, or any sensitive tissue, should be made from the fused nitrate of silver, not from the granular nor the crystalline form, because ordinary nitrate of silver contains a free acid.

Examine pus from the middle ear immediately after paracentesis, to guard against organisms from without. The smegma bacillus is often confounded with the tubercle bacillus, which it clearly resembles; the former is rarely if ever found singly, the latter very rarely occurs in middle-ear supuration.

If there be streptococcus infection, instead of trying to abort the mastoiditis open the mastoid promptly, unless the case is improving. The other ear may become inflamed and show streptococci within two or three hours.

Potassium iodide (in collyria, lotions, etc., 2.5 per cent.) readily enters the aqueous and vitreous, but penetrates the lens capsule with difficulty.

Paralytic myosis follows a lesion of the pupil-dilating fibers, and is characterized by slight contraction and reduction of reaction to light or convergence.

In spastic myosis the reaction to light or accommodation is unusually slow.

Mydriasis paralytica is characterized by medium dilatation and total absence of reaction to light.

In spastic mydriasis the pupil reactions remain, but they are sluggish.

In two cases of senile cataract upon which "absorption treatment" had been used the cornea, upon operation, collapsed; the lens was adherent to the iris, although no synechiæ could be observed before extraction. The spoon had to be resorted to.—LEE WALLACE DEAN.

It is claimed that the normal consistency of the cornea is greatly weakened, and that liquefaction of the vitreous is not unusual in cases taking the "absorption" or "resolvent" treatment; this coincides with my own experience.—WALTER L. PYLE.

Recent corneal opacities may be differentiated from old ones by fluorescin, which stains green the former and not the latter.

Before local cauterization, curettage, etc., of the cornea define the limits of the lesion by staining with fluorescin.

Undiluted tincture of arnica flowers is very apt to cause an irritative inflammation—particularly of the eye—probably owing to the presence in the flowers of a minute insect which haunts them. For local use a dram of tr. arnica to six or eight ounces of water is sufficiently strong.

Arnica is *the* remedy for bruises; externally and internally.

For acute phlegmonous dacryocystitis—in fact for acute cellulitis almost anywhere—put six drops of compound tincture of iodine into a well-stoppered bottle with six ounces of water, and give a teaspoonful (or an equivalent swallow) every hour in severe cases; lengthen the interval between doses as improvement is manifested.

SOCIETIES.

NEW YORK COUNTY HOMŒOPATHIC MEDICAL SOCIETY; April, 1903.

Clinical Significance of Certain Defects in Voice and Speech.
GEORGE B. RICE, Boston.

Only the varied effects on the voice and speech of local changes, produced either by disease or congenital influences, were considered.

Physiology: Contraction of the respiratory muscles controls the pressures of the inspired air filling the trachea and larger bronchi, vibrating the vocal cords. The sound-wave thus started, acting upon the column of air in the trachea and larynx, is modified first by the degree of compression to

which it is subjected in the laryngeal cavity, and afterwards by the shape of the resonant chambers of the pharynx, buccal cavity, naso-pharynx, and nose.

Power of tone is determined by this pressure; the pitch and quality by adjustment of the vocal bands and the modification of the resonant cavities. Cortical centers preside over the voluntary voice function of the larynx, and a bulbar center over its respiratory or automatic function.

Du Bois Raymond found that the sound "Ah" was an elementary vowel from which all other vowels were derived, and that a change in the tuning—that is, in the shape and dimensions of the resonant cavity—changed the character of the primary sound so that an approach to the sound of other vowels was produced.

When the sound "Ah" is produced, the tongue lies flat on the floor of the mouth, the mouth is opened and the soft palate is drawn upward and backward, partially closing the naso-pharyngeal cavity. By a little greater approximation of the teeth and lips, the corners of the mouth being drawn outward, the edge of the tongue being elevated, the sound "E" is produced. "O" is formed by the circular approximation of the lips, the tongue rises at the base and its tip is drawn away from the teeth.

The consonants are produced by the obstruction of the outflowing current of air by the application of the tip of the tongue to the incisors, and by the application of the back of the tongue to the soft palate, and by closure of the lips.

The nose in conjunction with the naso-pharynx has an important part to fulfill in voice production. In uttering the vowel sounds the nasal cavity is nearly shut off from the mouth by the soft palate, and only indirectly do the naso-pharynx and the nasal cavities act as resonators, while in uttering the consonants the velum is relaxed. The well-trained speaker or singer, however, is enabled to bring to aid the nasal resonant chambers in the use of both vowels and consonants.

In cleft palate the peculiar well-known quality is due to impaired control of the air column as it escapes from the larynx. In speech the soft palate is constantly called upon to aid in forming vowels and consonants. A condition in children has been brought to my notice, showing the same peculiarities of speech, yet having no apparent mechanical malformation of the palatal muscles. cursory examination

also fails to show any defect in the muscular movements of the soft palate and tongue, but if the patient is directed to sing the word "Ah" in an ascending scale, the difficulty will be apparent at once; for although the palate is drawn upward and backward, the movements are made at the expense of great effort. If the patient is asked to repeat the sound spasmodically in the upper range of the voice, it will be noticed that the muscles hardly respond at all to the mental effort. Whether the fault is due to imperfect innervation or to partial loss of co-ordination, I have not been able to determine, and I have searched medical literature in vain for information. I have learned, however, that the use of exercises which bring those muscles strongly into use, together with electrical stimulation, if persistently carried out during a child's development, will overcome this difficulty so that it will not be noticed in ordinary conversation.

The case of M. S., aged twelve, will serve to illustrate. She was brought to me on January 12, 1895, with this peculiar form of speech. I found enlarged faucial tonsils and quite a large mass of lymphoid tissue in the naso-pharynx, but could not discover at this visit any condition of the throat which seemed to account for the condition of the voice.

In February the tonsils, both faucial and pharyngeal, were removed, and after healing had taken place the throat examined by the method suggested. For three months I gave the child daily palate exercises, and twice a week made application of the galvanic current. After this there was a slight improvement in the quality of the voice. I did not see the patient again until the following December, when again the galvanic current was used, twice weekly, for another period of three months. The improvement was very pronounced, and the patient now speaks normally, but more slowly perhaps than would be natural to one of her temperament.

The so-called nasal voice, or thick voice, is produced by a variety of conditions, each of which interferes somewhat with nasal resonance. The consonants are produced with difficulty and the voice is dull and lacks carrying power.

Hyperplastic and hypertrophic rhinitis, septal deflections, tumors of the nose and naso-pharynx, all produce this voice in a more or less aggravated degree, according to the amount of interference with nasal vibration. I have noticed that the dead, thick voice is more characteristic of naso-pharyngeal growths and hypertrophies of the posterior portion of the

turbinated bodies, and that nasal obstructions situated more anteriorly give rise to the reedy voice, which has more resonance and greater carrying power. The latter condition may not have been so prominently or so frequently brought to your attention as to those of us who are doing special work and therefore a striking example of it will not be out of place.

Mr. C. W., a tenor singer, consulted me on April 13, 1896, complaining of difficulty in breathing through the nose, of dryness and irritation of the pharynx and larynx, and of hoarseness with a peculiar reedy, thick quality of the voice. I found, upon examination, a deflection of the cartilaginous septum toward the right and a thickening at the place of greatest deflection, with a dislocation of the columnar cartilage partly occluding the right side. There was also a general rhinitis present, due to the mechanical obstruction and pressure. April 16th the thickened cartilage was removed on the left side, and the dislocated columnar cartilage on the right side was resected, after dissecting away the mucous membrane which covered it. The flaps were then stitched over the site of the wound. These simple operations gave him complete relief from the troublesome symptoms, changing entirely the quality of his voice.

Deafness, when sufficient to make the finer sounds of the patient's voice indistinct, causes a certain monotony of tone, and usually a very pronounced loss of volume. The aurist can frequently tell, on hearing the voice of a patient under treatment and before making an examination of the ears, whether he be better or worse, from the quality and volume of the tone emitted.

Stammering and stuttering are due in most cases to imperfect co-ordination of the laryngeal elements of speech. The patient has the greatest difficulty in pronouncing words predominating in the consonant sounds, and therefore the general idea seems to be that the defect is due to the inability to pronounce these sounds. Arnott has taught, and his view is generally accepted, that this abnormality is occasioned by delayed action in the vocal mechanism, in the failure to begin the vowel sounds in the larynx from which other sounds are made, that is that the pronunciation of words is attempted before the tone is produced by the expiratory effort and vocal bands. When the vowel sound predominates, and the attention of the patient is thus directed to the larynx, no difficulty

is experienced. Usually the difficulty is not noticed in singing, or in speaking, if the primary sound is made continuous.

Delavan believes that the defect is aggravated by enlarged tonsils, post-nasal growths, and chronic inflammatory states of the pharynx and fauces, thereby causing increased effort and attention to the oral formation of words. Makuen, of Philadelphia, states that of two hundred cases coming to him for treatment for defects in speech, one hundred and fifty were stammerers.

The treatment should consist—first, in correcting such diseased conditions; second, in increasing the general nerve force of the patient; and third, in directing the patient's mind to the respiratory and laryngeal mechanism, allowing the oral function to be passive and automatic. By following these methods, a number of patients coming under my observation suffering from these speech defects, have been much aided.

It is not always an easy matter to determine the difference between hysterical aphonia and the loss of voice from paralysis of the laryngeal muscles. The laryngoscopic image of hysterical aphonia is almost identical with that in paralysis of all the adductors (inferior laryngeal nerve). In the latter condition the vocal bands assume a median position on attempts at phonation. In hysterical aphonia attempts at phonation bring the bands almost together, but not long enough to produce sound, and they then immediately return to the inspiratory or median position. The difference is so very slight in many cases that the differential diagnosis is not easy. A careful inquiry into the history of the case will, perhaps, give some clew to the origin of the affection, but even here it is easy to confound the two conditions, for although we may be able in some cases to determine central lesions, or find the causes of the loss of function to be due to pressure along the nerve trunk, yet this is sometimes impossible to demonstrate.

I have found one symptom of hysterical aphonia quite constant and I have come to rely upon it strongly, and this is the audible cough which can almost always be induced. An audible cough is impossible in true paralysis.

Unilateral paralysis and bilateral thyro-arytenoid, and arytenoid paralysis can easily be recognized by the appearance of the laryngeal image.

Persistent hoarseness is sometimes a symptom whose cause

cannot be recognized by laryngeal examination, for the laryngeal image does not always show tissue change. For instance, rheumatism of the pharynx, fauces, and larynx is not always associated with visible inflammatory changes in these tissues. Patients will complain of pain in swallowing, pain on attempting phonation and vocalizing, and of hoarseness. If the lesion is articular, the difficulty may be located by external palpation of the larynx; if muscular, careful inspection of the intrinsic laryngeal, and the palatal and pharyngeal muscles during attempted phonation and vocalization will establish the diagnosis.

It is a well established fact that hoarseness, as well as a cough, is frequently a reflex disturbance, dependent upon pathological changes of remote organs. A number of articles have recently appeared establishing a relation between the upper respiratory tract and the pelvic organs. Seiler, in the fourth edition of his work on "Diseases of the Throat," writes of this relation and also states that in co-operation with Prof. Howard C. Kelley, of the Johns Hopkins University, he was able to prove this relationship.

The laryngeal symptoms as a uterine reflex were a slight hacking cough, feeling of heat and burning in the throat, in some cases a choking sensation and hoarseness, and even aphonia. The appearance of the larynx was almost impossible to describe, but the mucous membrane had a bluish-red appearance with a certain amount of relaxation of the laryngeal tissues. The hoarseness peculiar to prostitutes is no doubt a uterine reflex also, for laryngeal inspection does not always show tissue changes.

Hoarseness and weakness of the voice due to hypertrophy of the normally large mass of lymphoid tissue in the glosso-epiglottic fossa, known as the lingual tonsil, are of so common occurrence in those patients who use their voices for public singing and speaking, and are so frequently overlooked, even by specialists, that I cannot refrain from giving this abnormality brief mention.

It is only about ten years since these hypertrophies have been recognized as productive of definite symptoms. In sixty cases on my record books, I found that all of the patients complained of a desire to clear the throat; 25 per cent., of a sensation of lump in the throat; and 50 per cent., of weakness and hoarseness on prolonged use of the voice in singing and speaking. The hypertrophies can easily be recognized, and

as easily removed by means of a guillotine devised for the purpose. The use of astringents, caustic acids, and the actual cautery are, as a rule, not of much value as compared with excision.

Anæmia causes the voice to be raised in pitch, it is thin in quality and breaks easily from sustained use. In marked aortic insufficiency it is also high in pitch and ill-sustained, but softer in quality. With mitral insufficiency accompanied by cardiac hypertrophy, the voice is husky and tremulous, and not easily sustained. Many surgeons regard the condition of the voice as a valuable sign for good or ill following severe surgical operations. In surgical shock it is reduced in volume and resonance may become completely aphonic, and this may be the case even before the pulse is markedly affected. The condition of the voice is also a guide in making diagnosis of the severity of shock following injuries.

It is my firm conviction that successful treatment must be based upon close observation by all the means at our command, and upon accurate diagnosis, for it is only by these processes that we can accurately separate those cases which are amenable to treatment by the indicated homœopathic remedy from those which must be cured by mental and physical training or by surgery.

Discussion.

C. E. TEETS: Dr. Rice speaks of hypertrophied tonsils being a factor in defects of voice and speech. In many cases it has occurred to me that it was not so much the enlargement of the gland as it was the direction in which the enlargement takes place. I have a number of times examined singers where the tonsils were very prominent, almost meeting when the tongue was depressed, and yet there seemed to be no difficulty in speaking or singing. When I have suggested their removal I have been told that, as they have never given them any trouble, they preferred to keep them until they did. A tonsil that is enlarged in the antero-posterior direction, and bound down by adhesions to the pillars so that we notice comparatively slight protrusion inwards, will not only prevent free action of the soft palate but interfere with the action of the muscles which open the Eustachian tubes, so that both the voice and hearing will be interfered with. Also a tonsil

chiefly enlarged in the vertical direction, being elongated to such an extent as to press upon the base of the tongue and epiglottis, will produce irritation and inflammation at the point of contact, which sooner or later extends to the neighboring tissue, producing changes in the voice.

The doctor has mentioned, as one of the causes of voice defects, hypertrophy of the lymphoid tissue at the base of the tongue; he states that it is only about ten years since these hypertrophies have been recognized as productive of definite symptoms. I hope Dr. Rice will pardon me if I correct this statement, because I hold in my hand a reprint of an essay on "Effects and Treatment of Hypertrophy of the Lingual Tonsil," which I read before the Society eleven years ago. I had studied the subject for four years previous to this, and became convinced that a great many symptoms which were attributed to other changes or affections of the nose and throat could be traced to this abnormal increase of lymphoid tissue. Many of the patients who came to me for treatment complained of the symptoms mentioned by Dr. Rice—sensation of a lump in the throat; constant, ineffectual efforts to clear the throat; and hoarseness on prolonged use of the voice. Some professional speakers and singers complained, not only of a change at times in the quality of the voice, but a decrease in the sustaining power of the voice. On the removal of this over-growth of tissue there was a marked increase in the sustaining power of both the singing and speaking voice.

There is another cause for changes in the voice which has not been mentioned, that is ulceration or foreign bodies in the glosso-epiglottic and pyriform sinuses. I cannot understand why there has not been more attention paid to the changes that take place in these sinuses, because Solis Cohen recognized the affections of these sinuses and mentioned them in his book which was published in 1879. He reports several cases of supposed chronic laryngitis; one, which had received treatment at several of the large hospitals without any permanent relief, was found on laryngoscopic inspection to be due to ulceration in one of the pyriform sinuses. This case was permanently cured by a few applications of nitrate of silver.

I reported in 1893 several cases of aphonia and cough which were cured in the same manner, so I am surprised to find no mention made of the glosso-epiglottic fossa or pyriform fossa

in such recent works as those of Burnett and Ingals, Watson Williams and Grayson.

The general practitioner may say to himself that this is a paper intended only for those who give special attention to diseases of the nose and throat, but I consider that Dr. Rice has given you many valuable points which are worth remembering, and I can assure you that sooner or later you will find them of practical value in treatment of defects in the voice and speech.

A. W. PALMER: Cannot we explain as follows the first speech defect mentioned with "no apparent malformation of the palate muscles," especially in the sample case given?

Before removal of the tonsils and adenoids, it can be seen that these growths push the soft palate forward, and they press against the palatoglossus and palatopharyngeus, deviating them from their correct position, which is a direct line between their origin and insertion, thereby vitiating their proper action. This enforced forward position of the palate also interferes with the natural contraction of the levator-palati and tensor-palati. This abnormal position of the palate existing for a long time, we can understand might cause a slight lengthening of the above mentioned muscles.

After the removal of the hypertrophies the palate is allowed to return to its normal position in the throat; what is the result? A flabby or flaccid palate. The necessary distance between the origin and insertion of the controlling muscles has been diminished. But the muscles do not nor can they immediately contract or shorten to accommodate themselves to the new position of the parts.

This flaccid condition of the parts is quite noticeable after operating on tonsils the upper zones of which are principally enlarged, and particular care has been taken to remove such zones, when we attempt to introduce an instrument behind the velum for removing the adenoids.

Until the muscles readjust themselves to the new condition of their surrounding parts, the articulation is as faulty if not more so than before the operation. So general is this fact that I usually forewarn a patient expecting to undergo removal of these growths that the voice will be affected temporarily after the operation. In the general atonic condition of the patient so frequently consequent upon these hypertrophies—

the contraction of the delicate muscular bands is sometimes very slow and can be materially aided by the means employed by Dr. Rice.

The narrowing of the anterior portion of the nares producing "reedy voice" I have found in some cases caused by the flaccidity or weakness of the muscles of the *alæ nasi*—namely, *dilator naris anterior* and *posterior*. These also may be toned up by the application of electricity.

One defect which I think the author omitted is the inability of a singer "to attack a note" immediately on volition, as they express it. This I have found to be caused by the interference with the proper action of the epiglottis by an enlarged lingual tonsil. The epiglottis may be deterred from rising or opening properly, or when open, in preparation to make an attack, it cannot close down immediately because of its being caught in the crevices of the lingual tonsil.

MISS L. E. WARREN: As has been clearly shown by the papers read this evening good speech requires a healthful condition of the air-chambers and other resonators beside prompt action of the voice-forming and the voice-molding organs. It happens frequently that after the physician and surgeon have performed their work the patient fails to improve in enunciation.

Here is work for the teacher. As speech consists of variously modified emissions of breath, first consideration should be given to the point where the modification begins—the vocal bands. Breath thrown forcibly through the open glottis gives no sound; when the bands are only somewhat relaxed the aspirate is formed. Pure voice is secured when the least amount of breath is forced between the vocal bands while they are in the position of close approximation and tension. Less breath is used in securing good voice than poor. All voice in the throat is "ah." The distance between the glottis and the lips is the voice-tube, and all changes from "ah" depend upon various changes in the shape of this voice-tube and also upon its varying length. Much depends upon a free larynx. When the tip of the finger is placed upon the throat in close proximity to the larynx and the sounds of "ah," "ee," and "oo" are made, if the organ is free very perceptible changes in its position will be noticed.

The second point to consider is the relation of the top of the

tongue to the front teeth and the soft palate. It can be ascertained by the sound of long *e*. The beauty of the vowel depends upon the proper relation of the sound-cavity back of the tongue with that of the one in front. The trained ear detects the existing condition. Exercises are then given to bring about a right adjustment. If it be found that the tongue is too far forward—as is generally the case—the muscles of the back of the tongue should be exercised and sounds practiced which are formed by these muscles with the assistance of the lips.

It might be well to state here that in the case of consonants the lips and the back of the tongue work together and the top and the point of the tongue work together, but in no language does the top or the point assist the action of the back of the tongue or the lips. The case is different with vowels; for them the lips may modify the action of the point or the top or the back of the tongue, one at a time, and no portion of the tongue assists any other part of that organ.

To return to our case: the right position of the tongue having been thus secured, the sounds made by the point of that organ—so numerous in English—are mastered with due regard at all times to the maintenance of what has been gained previously. In this way positive results are obtained with least expenditure of time and effort, and the pupil secures a clear and fluent articulation. The thick appearance and sluggish action of the muscles disappear.

Another interesting phase of defective speech is shown when the tongue remains so close to the bed of the jaw that the point cannot be raised to the upper gum. It must be exercised independently of the jaw. This is done by holding the manipulator between the teeth, thus keeping them well separated, and teaching the tongue gradually to climb up the edge of the manipulator and finally succeed in striking the upper gum, which is the necessary position for giving properly the sounds represented by the letters *l*, *t*, *d*, and *n*. The giving of the sound of *w* for *r* is due to a more or less tendency to the condition now considered. To secure the *r* it is necessary to train the tongue to turn back and touch any part of the hard palate desired. The correct position for *r* is a turning back of the tongue, the point of which must not be allowed to touch any part of the cavity.

In regard to cleft palate, it has been observed that in many cases after operations there is not space enough back of the

tongue to produce the full beauty of vowel sounds which depend, as before stated, upon the relation of the sound-cavity back of the tongue with that in front of the unruly member. Variations of vowels from the primary to the wide require flexibility and consequent expansion of the soft palate and free action of the muscles generally of that portion of the mechanism. Such action is difficult to obtain if the roof of the mouth has been formed out of scant material. If the surgeon could operate with this consideration in view it would be much easier for the patient to articulate well. Occasionally through the breaking of a stitch a small hole remains. If it be not far forward it has no serious effect upon the voice, but if far forward it dulls the hissing sounds.

I have had success with persons wearing artificial appliances. The best results accompany those that are made straight and long enough to make the patient feel that they touch the pharynx. By means of exercises the muscles on either side develop power to divide and direct the air column.

Many instances of defective speech seem to be due to slow hearing or to a somewhat deaf condition during childhood. There may not be sufficient aural defect to attract the attention of the casual observer, but enough to render scant appreciation for the hissing sounds and the niceties of the vowels generally. Habits of speech formed in this way become fixed and the individual is unconscious that he is speaking in any way differently from others.

It would seem that many cases of stammering, stuttering, and convulsive hesitation arise from the child's inability to give expression to his thoughts. Books are read to him which employ words beyond his powers to remember and repeat. Enthusiastic over the matter, his mind full of wonderful pictures, the child tries to tell those marvelous visions to companion or nurse and finds himself choking with utterance. The equilibrium between vocabulary and expression has been destroyed. Under such circumstances, I have known otherwise well-behaved children to throw themselves upon the floor and kick and scream violently. These cases are relieved by the teacher paying no direct attention to the articulation, but in its place giving careful instruction in language.

If it be desired that a child attain a fluent command of his own language, is it well for him to be taught others to any extent before he is six years old? Out of a number of cases let me cite one:

George M., when eighteen months old, spoke remarkably well. He was an only child, and had in consequence no companions of his own age; his enunciation was clear and his powers of construction far beyond the average. When he was two his parents moved to Paris. A French nurse was obtained, and although English was always spoken to him by his parents, the little fellow developed an astonishingly rapid and excellent command of French, and with it he lost his power of expression in his own language. Before a year had elapsed the family moved to Berlin, and in two months French was almost forgotten, his use of English became most babyish, while he made strides in German. Then followed serious results: At the age of three and a half he was brought to me a victim of pronounced stammering.

May I venture to express the opinion that fluent use of our native language is made somewhat difficult if the exclusive use of a foreign one be allowed from fifteen to eighteen. A number of persons who have had that experience have told me that they failed to regain English with ease.

From time to time I have had under my care children who were slow in attaining command of language. Some of these have had excellent kindergarten instruction for two or three years. The school work has appealed strongly to their eyesight. Under special training these children have shown a good memory and rapid gain in verbal expression. A systematic ear-drill sometimes accomplishes more than articulative exercises alone. Even the stammerer's maintenance of a high position of the larynx can be remedied by this method.

Correct articulation is a means of mental development and exercises to secure the former have a beneficial effect upon the nerves, generally making them more expressive agents of the mind. Correct articulation also leads directly to correct use of language, and thus to direct thought.

AMERICAN OTOLOGICAL SOCIETY. Thirty-fifth Annual Meeting; New London, Conn., July 15, 1902, Reported by A. W. PALMER. (Concluded.)

Remarks on Thrombosis of the Sigmoid Sinus, with Three New Cases. E. GRUENING, New York.

CASE I.—Child aged three. Aural complication of scarlet fever. First operation: The antrum and apex cells were

opened, pus and granulation tissue being evacuated, with temporary relief. The temperature rose again, and on consultation a second operation was deemed necessary—this time the cervical glands were removed and the sigmoid sinus exposed, but on account of its healthy appearance it was not opened; temperature subsided slightly. Eleven days later temperature rose to 106° , therefore it was decided to open the sinus. A half-inch incision was made in anterior wall of sinus, pus was evacuated, but no blood. The thickened wall was cut away with scissors, and bone covering the transverse sinus was removed. A curette passed centrally dislodged a large clot, then there followed a free flow of blood. A purulent clot was removed from the peripheral end without blood flow. The jugular was obliterated or diseased down to the clavicle; at this point it was doubly ligated, cut between ligations, and dissected out the whole distance from here to base of brain. The child is now well, ten years after operation.

CASE II.—Girl aged fourteen. Tenth day after measles: temperature 104° , earache, upper portion of m. t. red and swollen; vomiting, vertigo, photophobia, rotary nystagmus; the mastoid process tender throughout. Paracentesis. Next day, the mastoid excessively tender and soft parts covering it œdematous. Operation: Sero-purulent fluid and polypoid granulation tissue removed from the mastoid. The internal table covering the sinus showed no soft nor discolored spot—nevertheless it was removed; the sinus looked blue and healthy and was not incised. Symptoms subsided, but five days later the temperature rose to 106° . Second operation: The sinus was incised, evacuating a large quantity of clear serum and a large clot from the central end of the sigmoid sinus. Several pieces of clot were obtained from the peripheral end, but no bleeding. After ligating the jugular, resected it and enlarged glands covering it. Temperature fell, but patient died two days later.

CASE III.—Child aged eight. Slightly ill six weeks, quite sick one week. Vomiting and pain in the right mastoid, temperature 105° ; paracentesis. General condition good. Ophthalmoscopic examination negative. Three days later a chill and temperature 104° . Operation: The bone was very hard, no cells or antrum found, inner table softened over the sigmoid, a sequestrum was imbedded in granulation tissue, there was pus in the region of the sigmoid sinus, but no sinus

was found; as far as the lateral it had shriveled to a cord. This, as well as the jugular almost down to the clavicle, was excised. Recovery.

Discussion.

DR. MCKERNON: Even when the sinus is opened and a clot found, I think if we open the jugular bulb we will find the poisonous product there.

DR. BACON indorsed the latter speaker's idea of taking special care in investigating the contents of the jugular bulb if the sigmoid sinus seems healthy; also it is often unnecessary to resect the jugular vein, this latter greatly increases the shock of the operation.

DR. RANDALL: There is a difference between acute and chronic tympanic suppurations. In acute otitis we often have a non-septic thrombus, many of the acute cases are phlebitis alone, not clot, and the location is most commonly the bulb. The speaker has seen bones in which a hiatus opened from tympanum to bulb.

DR. HOLT reported a peculiar case of double mastoid operation in which at one time the buccal temperature would be 114° , while the rectal was subnormal and at another time this state would be just reversed.

Thrombus of the Superior Longitudinal Sinus D. B. LOVELL.

Boy aged fifteen. When six years old had measles, followed by intermittent otorrhœa for three years, then cured. Present attack commenced suddenly with nausea, vomiting; stupid, and pain in right side of head; temperature 102° , at night arose to 104° . Anuria for fifteen hours; catheterization drew only one ounce. Fourth day: first pain in ear, marked mastoid tenderness, face flushed, lips and tongue dry; free sanguino-purulent discharge from ear. Then operated: the mastoid was sclerosed, but no pus was found; about one inch back of the mastoid pus was seen beneath the periosteum, but no perforation of bone could be found. Further operation was suspended because of collapsed condition of the patient. He seemed to improve until the sixth day, when there was some diplopia, pain about the eyes and in the back of the neck; very drowsy. Seeming improvement until the twenty-sixth day. The neck below the wound swollen and sensi-

tive, severe headache, nausea, vision again poor, pupils widely dilated, and some pain in the right hip. Under ether a quantity of pus was evacuated from a pocket extending down to within an inch of the clavicle. He improved for five days, then became delirious, and shortly after a large hæmatoma developed on the top and back of the head, which was incised. Death two days later.

Autopsy: Calvarium adherent to dura over the longitudinal sinus at fissure of Rolando; dura discolored, drops of pus where the dura was torn from the bone. Remaining meninges normal. The longitudinal sinus was filled with pus throughout its whole length; it was perforated so that pus lay in contact with the left cerebral hemisphere. Little pus in left lateral sinus.

A Case of Progressive Deafness. Intermittent Right Hemiplegia, with Sensory Aphasia. Letter, but not Word-Blindness. HERMAN KNAPP, New York.

An interesting and minute report of case with remarks; it is necessary to read the original to get an adequate conception of this peculiar case.

Supplementary Report of a Case of Double Stapedectomy Operated upon Ten Years Ago. FRED. L. JACK.

Immediately after operation the hearing greatly improved and contrary to expectation of many, it has not diminished since. The author's conclusions, based on ten years' investigation, are: "(1) Removal of stapes does not destroy hearing, but sometimes improves it. (2) The operation upon the profoundly deaf is not advisable. This opinion is based upon seventy cases. In this class of cases as a rule the bone cannot be removed, and if it were, the chances are that no improvement would follow, as the sound-perceiving apparatus has undergone irremediable changes. (3) Removal of the stapes is a perfectly justifiable procedure in certain cases of distressing vertigo (Ménière's disease) after all other means have failed. (4) Operation on a case of moderate deafness may give brilliant results, but it is attended with some risk to the hearing."

Observations on Anæsthesia of the Drum Membrane. GEO. B. MCAULIFFE.

The nerves of the m. t. are distributed to the inner or mucous layer, to the middle, but not to the external or dermal layer;

therefore anæsthesia by cocain through the Eustachian tube is the best. The spray probably does not reach the m. t., but it is absorbed by the tubal mucous membrane and affects the m. t. by reason of continuity of structure; because cocain anæsthesia acts about an inch from the spot of application. But when we wish to apply cocain externally, first cleanse with hydrozone; second, dehydrate the external layer of the drum with alcohol; and, thirdly, increase its capacity of absorption with aniline oil. Use a 10 or 15 per cent. solution of cocain in equal parts of alcohol and aniline oil. The pain of incising the drum is more from the inward pressure than from the cutting of tissue, therefore the greater ease with which it is made by the delicate Graefe knife than with the usual paracentesis knives.

The Value of Bacteriological Examination of the Discharge in Acute Otitis Media as Determining the Necessity of Operative Interference. DRS. E. B. DENCH and F. M. CUNNINGHAM.

By this microscopical examination all cases of acute middle-ear suppuration, accompanied by mastoid symptoms, may be divided into two separate and distinct types. Those in the discharge from which streptococcus infection is found either alone or in combination, will usually rapidly attack the bone; in these operation is almost invariably necessary. On the other hand those containing pneumococcus, staphylococcus, etc., or those not containing the streptococcus, may be cured by local non-operative measures. In two cases of pneumococcic infection with very severe clinical symptoms, operation was performed; the mastoid was found congested, but contained no pus nor granulation tissue. Conversely, in four cases that we were able to follow, due to streptococcic infection, which at first seemed to be cured by local measures, the patients have returned later pale and apathetic, presenting the appearance of general sepsis; operation has disclosed most extensive destruction of bony tissue—in the epidural abscess, and in one thrombosis of the lateral sinus.

“It is unwise, however, in cases of streptococcus infection, to attempt to abort extension of the inflammatory process to the mastoid by the local application of cold. If free drainage and surgical cleanliness do not cause the mastoid symptoms to disappear at the end of forty-eight hours, immediate opera-

tion is demanded. The use of ice in cases of streptococcus infection is, I believe, absolutely unwarrantable."

A Piece of Bougie in the Eustachian Tube. J. O. TANSLEY.

Report of a case from which the author removed a piece of bougie from the Eustachian tube, which had been accidentally broken off during treatment by a previous physician. The writer is opposed to their use.

HOMŒOPATHIC MEDICAL SOCIETY OF CHICAGO, February 19, 1903.

The Early Treatment of Tympano-Mastoiditis. BURTON HASELTINE.

By the expression "Early Treatment" we mean to exclude all those procedures known as the mastoid operations, which, although sometimes necessary early in point of time, belong nevertheless to a later stage of the disease.

We also exclude those mastoid inflammations resulting from chronic middle ear suppuration, for these are always secondary cases, the only treatment for which is surgical. This limits us to the early treatment of acute tympano-mastoiditis, which is the condition most often met in practice.

The treatment naturally divides itself into: Treatment before perforation of drum head, and treatment after perforation of drum head.

Treatment before perforation: This should begin with prophylaxis, which means care in all cases of infective fevers to prevent the occurrence of otitis. In all these fevers there is catarrh of the rhino-pharyngeal mucosa, and often an actual eruption similar to that found on the skin. Attendants should be watchful to prevent undue accumulation of secretions. Passages should be kept clean by gentle spraying or swabbing with warm solution, mildly germicidal and non-irritating.

In an established otitis attention must be directed to the ear itself, and the amount and character of fluid ascertained, if any be present. With little or no fluid present the drum should be left intact and heat applied, moist or dry. The writer prefers dry hot air, but the water current is good. If nose is clean front and back, gentle inflation may be given. Where heat cannot be applied, as in frightened children, the writer sometimes uses a bougie of gelatin and glycerin containing atro-

pin, opium, and carbolic acid. Relief is often obtained, and he has never seen harm from the use of this.

Frequently paracentesis will be necessary; the following are his indications for this operation:

(1) A large amount of exudate, as shown by bulging of drum head, with or without pain.

(2) Moderate amount of exudate, purulent in character, as shown by boggy appearance of drum head.

(3) Persistent severe tympanic pain after thorough use of heat, with or without exudate.

(4) Persistent pain radiating backward with deep mastoid tenderness indicating antrum involvement.

Treatment after perforation: First remove all discharge from the canal and middle ear. The dry swab is best in skilled hands; the syringe in unskilled ones. Inflation and the use of hydrogen peroxid are both allowable if there is good, free exit from the tympanum through the drum head.

In cases of severe mastoid involvement more active measures must be employed. Pus is now confined within the antrum, and we must re-establish drainage through the aditus and attic into the middle ear. This is commonly attempted by the use of cold externally, the ice-bag or the Leiter coil. The value of this is doubted by some, but probably used by the majority of aurists.

There is another measure, original with the author, which he has come to regard as exceedingly valuable in this condition. This is the forcing of adrenalin chlorid solution through the opening in the drum head and into the attic, to come into contact with the swollen lining of the aditus. He has often by this method released accumulations of pus that would otherwise almost certainly have necessitated the mastoid incision.

In many cases relief is not obtained from any or all of these procedures and then the writer operates, even earlier than is generally advised. If any relief is to be obtained he believes it will be apparent in forty-eight hours at most, and delays after that time are not only futile but dangerous.

Discussion of the subject is not complete without mention of general care of the patient and internal medication, for both are important. Rest in bed is generally advisable, at least while there is temperature, as systemic shock is apt to be pronounced. The bowels should be kept free and the diet should be nourishing with the least possible tax upon digestion. Remedies are

of service, and here the aurist of the homœopathic school has the advantage. Quinin, salicylic acid, and the coal-tar derivatives in acute fevers are all dangerous to the ear.

Before rupture of the drum he gives belladonna, gelsemium, bryonia, phytolacca, kali hydriodicum and sometimes rhus tox. After perforation, hepar, the mercuries, the iodids and kali bichromicum. Gelsemium may be useful after perforation as well as before and is especially suited to cases resulting from influenza.

Moderation in the Treatment of Nasal Affections. W. M. STEARNS.

Fashions in dress are scarcely more arbitrary than fashions in medical practice. The blind following of surgical fashions is apt to result in the abuse of procedures otherwise valuable. But the enthusiast or faddist serves one good purpose in that his optimism paves the way for good work later by conservative operators.

To attempt to treat all nose and throat affections internally and by mild local measures would be doing our patients injustice. But fashions in nasal work have led to much useless, if not harmful, surgery. The common operations for removal of spines and spurs and for the correction of septal deformities are of great value when there is obstruction to nasal breathing. In other cases such deviation from the normal shape are beneficial and operations will produce harm rather than good.

Especially would the writer deprecate the too frequent attacks upon the turbinated bodies. Conditions demanding removal of any part of the inferior body are exceedingly rare. The function of this body is too important to justify this destruction merely for the immediately good results. The same remark applies to the use of the electro-cautery in this locality.

Many cases of enlarged turbinal may be cured by being treated as subacute congestion. Many such cases respond to the internal use of gelsemium while those of long standing, showing vasomotor paralysis, are helped by nux vomica or strychnia. Attention should be directed to the liver, which is often sluggish. The local use of mild astringents often helps in regaining lost tone.

Hypertrophy of the middle turbinal calls for operation more often than does that of the lower.

Moderation should also be advised in the removal of adenoid tissue from the naso-pharynx. Cases of undue dryness and of chronic laryngeal irritation sometimes result from the too free operation or from the use of the cautery in this region.

Laryngeal affections generally require moderation in their treatment. Experience shows that such troubles are usually secondary to disease of the naso-pharynx and the author has almost discarded direct treatment of the larynx except in neoplastic or destructive disease. Furthermore, he finds that no affections in any part of the body yield more readily to homœopathic medication than do those of the larynx, an important point when we consider how poorly the laryngeal mucous membrane bears local applications. B. H.

ILLINOIS STATE HOMEOPATHIC MEDICAL ASSOCIATION—EYE, EAR, NOSE AND THROAT BUREAU; Chicago, May 13, 1903. BURTON HASELTINE, Chairman.

The first paper by W. M. Stearns was a report of a case of facial nerve paralysis due to exposure and taking cold without a history of otitis or traumatism. The paralysis was for a time complete, producing the typical deformity of one side of the face. As the ear did not demand local attention the case was treated with internal homœopathic remedies and attention to general hygiene. Belladonna was given early, later gelsemium and still later strychnia. Recovery was slow, but ultimately perfect.

Mastoiditis in Children. C. GURNEE FELLOWS.

The author was led to the choice of this subject by the fact that he had recently had in charge several cases of mastoiditis resulting from otitis media that had apparently had proper treatment. Also several cases due to neglect in some of which the fault was on the part of the attending physicians.

The first case was a girl aged thirteen, who had formerly been a mouth breather from adenoids, but had been cured by operation. Had an otitis following a cold, was treated by simple wiping out of the ear and applications of heat. Both mastoids swelled and became tender. Child was put into hospital and one side which showed superficial pus was incised. After evacuation of external abscess search was made for an open sinus, but none was found. Wound was packed and

drained for a week and then allowed to heal. Result: complete recovery with cessation of discharge.

In the second case a similar condition resulted from adenoid for which operation had been advised and refused. The treatment was the same except that as a sinus was found the mastoid cells were curetted. Result, recovery with cessation of the discharge. The adenoids were removed later.

Several other cases were reported, all recovering with simple drainage and without the radical operation. In treating the otitis that precedes mastoid invasion he uses hydrogen peroxid with syringing and then drying as thoroughly as possible. Also keeps the patient in bed and applies dry or moist heat. Does not inflate. Does not use gauze packing in this condition. Uses ice bag over the mastoid at the same time with hot douches in the ear. Values homœopathic treatment highly and thinks of belladonna, hepar, silicea and merc. sol., with others for special indications.

Electrolysis in the Treatment of Trachoma. EDGAR A. GEORGE.

The author had tried all the standard methods for the treatment of this extremely obstinate disease and had finally come to discard them all in favor of electrolysis. His results from this treatment were uniformly better than from any other, medical or surgical. The current as used by him is not caustic in action, but is antiseptic and produces absorption of the redundant masses without the production of cicatrices. He also finds it valuable in treating the scars that have resulted from the use of caustics. Hence it is especially of service in cases of entropion and pannus. His conclusions were supported by the reports of several cases from practice.

A Case of Sympathetic Ophthalmia. C. J. SWAN.

This was a case of a girl, fifteen years old, who wounded the left eyeball with a table knife. Vision was immediately lost except light perception. The eye was treated by her family physician with boric acid washing. Six weeks after the injury the sound eye became red, irritable and slightly painful. The same treatment was continued as the trouble was thought to be from cold. In two weeks more vision began to be impaired and continued growing worse until the family became alarmed and sought expert advice. Came under the writer's care January 1, 1903, four months after the injury.

Wounded eye showed extensive scar in the ciliary region involving the iris. Tension was much reduced.

The sympathizing eye showed iritic adhesions and opacities of the vitreous. Tension was minus and vision was fingers at four feet. Treatment was removal of wounded eye and atropin with exclusion of light from the sympathizing one. Patient had iodid of potash, sodium salicylate, and pilocarpin sweats at different times. Each of these seemed to help slightly at first, but later lost all effect. Patient went home after three months in the hospital with vision only for large objects in a very light room and without any hope of improvement.

The last paper was by Burton Haseltine, *The Eye in Childhood*. (See p. 157 this number.)

ABSTRACTS FROM CURRENT LITERATURE.

The Role of the Toxins in Inflammations of the Eye.—Robert L. Randolph, Brooklyn.—*Am. J. Med. Sci.*, November, 1902, and *Bull. Johns Hopkins Hos.*, March-April, 1903.

Bacteria, not always harmless ones, are constantly present in the normal conjunctival sac. It is no uncommon thing to find either the micrococcus lanceolatus or the staphylococcus aureus in a conjunctiva which is, clinically speaking, normal, and the micrococcus epidermidis albus (Welch) is an almost constant inhabitant of the normal conjunctival sac.

“Personally, I feel quite sure of the parasitic origin of trachoma, but doubt whether it can be shown that either vernal catarrh or phlyctenular conjunctivitis has its own bacterium.”

Toxins are undefined chemical substances susceptible of filtration, precipitation, and resolution; they are usually complex, being made up of an alkaloidal material and a nitrogenous substance which is very active.

The question as to the part played by the toxins in inflammations of the eye is one which has not led to much discussion, still less to original research. The only experimental studies which have been made on the subject are by Bardelli,

Druault and Petit, Henri Coppez, and Morax and Elmassian. The first two communications are very brief, and while suggestive, they cover too little ground to rank with the work either of Coppez or of Morax and Elmassian.

Coppez studied the manner in which toxins secreted in the conjunctival sac act upon the cornea. Corneal epithelium offers a certain resistance to the diphtheria toxin, but when the former breaks down the cornea undergoes rapid changes. This epithelium can be injured by the very act of making applications to the eye in the course of treatment; the constant brushing of the cornea by the false membrane on the upper lid can easily produce a disturbance in the corneal epithelium; and, finally, the action of the toxin itself upon the epithelium often macerates it after about forty-eight hours. The tears have no antiseptic influence upon the diphtheria bacillus. The streptococcus toxin and the pneumococcus toxin have very little effect upon the cornea. The toxins of the staphylococcus, the effects of which have also been studied by Solovieff and Molorosky, reproduce on a small scale pretty much the same lesions as the staphylococci themselves.

The most valuable study, however, up to 1899, was made by Morax and Elmassian, who made thirty-eight experiments, instilling into the rabbit's conjunctival sac the toxins of the gonococcus, of the Koch-Weeks bacillus, of the Morax-Axenfeld diplobacillus, and of the staphylococcus. Of course, these organisms do not multiply in the conjunctival sac of the rabbit; and it is for this reason that we get only negative results when we try to produce a conjunctivitis in this animal by inoculation with exudates of infectious material taken from the human conjunctiva.

"In October, 1899, a few weeks before I had seen either the work of Coppez or of Morax and Elmassian, I had commenced an experimental study along these lines. In addition to the gonococcus, the diphtheria bacillus, and the pneumococcus I experimented with the toxins of the staphylococcus aureus, micrococcus epidermidis albus, streptococcus pyogenes, bacillus coli communis, and bacillus xerosis, each of which, with exception of the micrococcus epidermidis albus, has been placed on record at various times as being more or less concerned in producing inflammation of the eye in some form or the other."

The staphylococcus aureus is related to a number of inflammatory conditions of the cornea and conjunctiva, being found on the margins of the lids in blepharitis and phlyctenular conjunctivitis. This organism is often found in blennorrhœa of the lacrymal sac, and in mixed infections in most corneal ulcers except in the so-called 'pneumococcus ulcer' (serpent ulcer).

"The micrococcus epidermidis albus is a less pathogenic organism than the preceding one; and while I can find no record which would indicate that it was the principal agent in an inflammation of the eye, I am of the opinion that under suitable conditions it is pathogenic, and that in many of our more common conjunctival and corneal troubles, to say nothing of post-operative inflammation, this organism plays a part."

The streptococcus pyogenes is sometimes the cause of corneal ulcer, and it is also concerned in various suppurative processes in the eye. This organism is not infrequently present in purulent dacryocystitis, either alone or mixed with other bacteria, and there is a form of membranous conjunctivitis, generally seen in children, which is caused by the streptococcus and known as streptococcus diphtheria of the conjunctiva.

The bacillus coli communis is on record as having caused panophthalmitis. Groenouw has observed this organism in catarrhal conjunctivitis of the newborn.

The xerosis bacillus, which morphologically resembles the diphtheria bacillus, like the micrococcus epidermidis albus, is often found in the normal conjunctival sac, and like the latter organism probably plays a part in many of the inflammations in this locality.

The toxins were obtained by filtration, though sometimes the dead cultures were used.

The article is further divided into four parts: I. The effect produced by toxins when they are instilled into the conjunctival sac. II. When they are injected into the conjunctiva. III. When they are injected into the anterior chamber. IV. The bacteriology of the normal conjunctiva of the rabbit, based upon the examination of forty-seven cases.

Control experiments were made and the conclusions reached that: 1. Bacterial toxins, so far as tested, when instilled even for many hours into the rabbit's healthy conjunctival sac were found incapable of producing inflammation or causing other injury.

2. The same toxins when injected into the tissue of the conjunctiva or into the anterior chamber invariably set up local inflammation, the extent and intensity of the inflammation varying to some degree, according to the species of bacterium yielding the toxin.

3. Bacteria which had not previously been proven to produce soluble toxins were found to produce them even in young cultures, and it is suggested that injections of bacteria filtrates into the eye, particularly into the conjunctival tissue, constitute a more delicate biological test for the detection of certain toxins than the tests usually employed for this purpose.

4. The experiments recorded in this paper furnish additional examples in a comparatively new field of the importance of toxins in explaining the pathogenic action of bacteria, and likewise emphasize the etiological significance of injuries of the covering membrane of the eye in favoring the action of toxins and of bacteria; for the first time satisfactorily demonstrating that these poisons are not absorbed by the healthy mucous membrane of the conjunctiva.

A valuable bibliography is appended.

J. L. M.

Actinomycosis of the Eye.—Guibert, *La Clin. Ophtalm.*, December 10, 1902.

A healthy-looking man had slight inflammation of the right conjunctiva near the inner canthus, slight lacrymation of that eye, and a swelling resembling chalazion in the lower lid, involving the canaliculus; pressure on the lachrymal sac extruded a grayish fluid. The lacrymal passage was free; fluid injected passed readily to the nose. Incision of the swelling revealed a grayish mass lying in a pouch connected with the lower part of the canaliculus. This broke up on removal into rounded grains, rather smaller than a pin's head, which showed microscopically the characteristic appearance of actinomyces.

J. L. M.

Dionin for Corneal Opacities.—F. R. v. Arlt.—*Woch. f. Therap. u. Hyg. des Auges*, December 11, 1902.

Five mgm. (1-10 gr.) of the solid drug is applied to the conjunctiva [?] once, or rarely twice, a week. The pain lasts two to five minutes; usually œdematous, reaching its height in

fifteen or twenty minutes and lasting four or even over twelve hours; sneezing is a common sequel. For home treatment a small mass of 10 per cent. ointment is placed inside of the lids and gently rubbed over the cornea once a week. J. L. M.

Causes of Blindness in Kentucky: From a Study of the Eye of the Pupils of the Kentucky Institution for the Education of the Blind.—W. O. Bailey.—*Am. Pract. and News*, December, 1902.

Two hundred and twenty-eight cases, of which one hundred and eighty-nine were white and thirty-nine colored. Fifty-three additions to the institution, of which fifty were white and three colored were examined subsequent to Dr. Ray's report in 1895 to the Kentucky State Society.

	WHITE.	COLORED.	TOTAL.	PER CENT.
Purulent ophthalmia,	53	7	60	26.3
Trachoma,	33	..	33	14.5
Phlyctenular keratitis,	16	13	29	12.7
Congenital and lamellar cataract, . . .	20	4	24	10.5
Irido-cyclitis,	14	5	19	8.3
Atrophy optic nerve,	13	4	17	7.5
Traumatism and sympathetic ophthalmia,	12	3	15	6.6
Congenital syphilis,	6	..	6	2.6
Retinitis pigmentosa,	3	1	4	
Albinismus,	4	..	4	
Congenital central choroiditis,	4	..	4	
Congenital glaucoma with atrophy, . .	3	..	3	
Hydrophthalmos,	2	..	2	
Nystagmus,	1	1	2	
Amblyopia with high myopia,	2	..	2	
Amblyopia with hypermetropia, . . .	1	..	1	
Traumatic cataract (one eye),	1	..	1	
Smallpox,	1	1	
Anophthalmos,	1	..	1	
	189	39	228	

Discussion.

ADOLPH O. PFINGST: It is my opinion that in the entire United States about 60 per cent. of the cases in which the cause is known may be ascribed to idiopathic causes. Between one and five years is the period of greatest danger to the eye. In the adult the most common cause of blindness is optic atrophy, occasionally associated with brain conditions.

I. LEDERMAN: This paper does not cover all the ground, as it does not consider those who have become blind later in life. Another thing must be borne in mind, that these statistics cover cases in which the cause of blindness is some years back, and I believe the statistics of a few years hence will give a more favorable report. A great many of these cases of blindness are due to gonorrhœa, caused before the introduction of the Credé method. The principles of asepsis are more thoroughly applied now than ever before, and the census of 1900 will show a much better report than the census of 1890.

It is my impression that the most of the children in the institution come from country places and small town throughout the State, and comparatively few from the large cities. We know that a great many of our trachoma cases come from such sections, where they have not had the benefit of modern knowledge of ophthalmology. Now that this knowledge has been more widely disseminated the general practitioner is giving more attention to the diseases of the eye than he did formerly. He at least recognizes the serious nature of certain eye diseases, warns the patient of the dangers, and promptly refers him to the specialist.

J. M. RAY: One thing that has impressed me is the large number of so-called contagious preventable cases. These statistics show that over 40 per cent. of the blindness in this State is due to purulent ophthalmia and trachoma; this should impress on us the importance of teaching the people with reference to the diseases and the method of their prevention.

Here in Kentucky we have at least three well-known centers of trachoma.

Another point brought out in connection with the examination of these cases was the fact that there is no trachoma among the colored children. I have never seen a case of true trachoma with secondary corneal involvement in the colored race. They suffer quite as often with phlyctenular conjunctivitis as the white race. I have never seen in phlyctenular conjunctivitis involvement of the cornea, and they all get well by treatment.

Dr. PUSEY: I was expecting to hear more about the causes producing blindness aside from the external inflammation.

H. N. LEAVELL: I have had occasion to observe many cases of eye trouble in the college clinic during the last seven or eight years. Like Dr. Ray, I have never seen a case of trachoma in the negro, though I have seen the phlyctenular conjunctivitis, which differs from trachoma in not being a specific infectious disease. Phlyctenular keratitis is more common in the colored race, because of their bad hygienic conditions, and I believe I may safely say that 25 per cent. of the eye diseases in the colored race that present themselves to the college clinics are due to phlyctenular keratitis.

H. N. BULLITT: These blind children do not learn so rapidly as the children with eyes; while a few of them develop in a marked degree, most of them are deficient. If a child with eyes were put to tasks blindfolded, he would learn much more readily than the blind children themselves. For the prevention of blindness by the Credé method argyrol seems to have every advantage over the other silver solutions. It has no unpleasant reaction.

W. O. BAILEY: None of the pupils of this institution are received over eighteen years of age, and they have to leave at that age. So the study of these statistics has nothing to do with the cause of blindness occurring in adult life. All of these pupils are not totally blind. Some of them have fair vision, but not enough to enable them to get an education in the public schools, and therefore they have to look to an institution where they can get it.

J. L. M.

Otitic Sclerosis.—H. J. Hartz.—*Annals of Otol., Rhin., and Lar.*, December, 1902.

1. This sclerosis is fundamentally a hyperplasia of the bony capsule of the labyrinth; the hyperplasia is a transformation of cartilage into bone, accompanied by formation of outgrowth of bone.

2. It is initiated by constitutional diathesis, such as inflammatory rheumatism, gout, syphilis and scrofula, by diseased tonsils in the pharynx and vault, suppurations with calcareous deposits in the tympanic cavity, exposure to cold and wet, and injury.

3. Its localization is usually in the labyrinth capsule near

the stapes articulation with the oval window, inducing fixation of the ossicles.

4. It may involve also the semicircular canals and cochlea, to produce symptoms of nerve deafness.

5. It may affect simultaneously the sound conduction and the sound perception apparatus.

6. The functional test, the subjective symptoms and family history permit an early diagnosis of this disease. These are:

a. Hyperæmia of promontory.

b. Heredity.

c. Schwabach test reveals prolonged bone conduction.

d. Rinne's test is negative in varying degree.

e. Defective perception of one-half to one and one-half octaves of the lower tones.

7. Probably 10 per cent. of the middle ear diseases are true sclerosis, and are designated synonymously capsulitis labyrinthi, oto-sclerosis, spongification, dry middle ear catarrh, and otitis media insidiosa. The therapy is effective in early stages of the disease by hygienic and medicinal treatment. The more advanced cases may be improved by judicious treatment, with amelioration of tinnitus.

J. L. M.

Myasthenia and Ophthalmoplegia.—Sir William R. Gowers.—*Brit. Med. Jour.*, May 24, 1902.

The mysterious malady commonly called "myasthenia," or "myasthenia gravis," is a rare disease, the special characters of which have only been discerned during recent years. Indeed, it is still not known, even by name, to many members of the profession. It is met with chiefly in the first half of adult life, and is characterized by general feebleness of the muscles, and also by their quick exhaustion on use, and the quick renewal by rest of what power they possess. The same feature is often, but is not always, conspicuous when the muscles are stimulated by electricity, the effect of a tetanizing faradic current of given strength soon, as a rule, ceases, but returns after a brief rest. This weakness is not attended by definite wasting, or loss of electrical excitability. Although general, it is especially marked in the lips, palate, pharynx, and often in the muscles of mastication, and in those of the eyeball. The "bulbar" weakness, indeed, first at-

tracted notice, and the condition has hence been termed also "myasthenia bulbaris."

The course of the disease presents curious variations, but is seldom definitely progressive, nor has great improvement been often seen, except as a transient event. Death has been the result of intercurrent disease, and has yielded no clear indication of the nature or even the seat of the malady. Treatment has seldom had marked effect.

The symptoms vary in different cases, and in some there has been considerable loss of power in the eye muscles. The paper describes three cases in which this feature was very marked, and calls attention to another symptom which each presented, a peculiar alteration in the smile, due to the absence of the normal action of the zygomatic and risorius muscles.

The patient's expression attracts notice from the fixed aspect of the eyes, and the apparent absence of the power of smiling. The "nasal" or "levator" smile, or snarl, is characterized by the absence of the normal movement at the corner of the mouth.

Loss of power in the eyeball muscles was a most conspicuous and enduring symptom in these three cases. J. L. M.

Prepared Silk for Advancement of a Rectus Muscle.
—Claud Worth, London.—*Ann. of Ophth.*, July, 1902.

A reel of thick black silk (No. 24, made for sewing boots) is wound loosely round a winder (made by bending up a piece of galvanized iron wire). It is boiled in water, to sterilize it and to remove the superfluous coloring matter. It is then dried before a fire. One end is then threaded through a hole in a lead weight and the lead weight is dropped into a beaker of very hot paraffin wax to which a little vaselin has been added. In this way the whole thread is drawn through the boiling wax as it is unwound from the winder by an assistant. It is wound on a large glass reel, and is kept in a clean jar, always ready for use without further preparation. In preparing for the operation, a piece of the silk about a foot long is drawn out of the jar with sterilized forceps. It is threaded through a very sharp, full-curved eye needle as far as its middle. The two halves of the waxed silk thread are then twisted together with the fingers into a single cord. The part of a suture which experiences the great-

est resistance in passing through the tissues is that near the eye of the needle. The thread must be double here, in any case, so one may as well have the benefit of the double thickness throughout. This wax-soaked thread has sufficient stiffness at the ordinary temperature of the air to prevent kinking during the operation; but at the body temperature it is quite supple. It glides easily, and with a minimum of damage to the tissues—like a well-greased catheter. It is practically non-absorbent—a most important matter in a region which cannot be kept absolutely aseptic. The wound heals more quickly and with less conjunctival œdema than when undressed thread is used. J. L. M.

Garey's Ophthalmo Oscillator [sic] "A New Method of Treatment for Chronic Intra-ocular Diseases."—S. B. Muncaster, Washington.—*Ophth. Rec.*, June, 1902.

Four cases are given which were treated within the past two months, improving vision and strengthening the eyes. By means of an automatic valve the machine exerts only suction upon the eyeball, which is pulled back by the elasticity of the tissues to which it is attached. Nutrition and light perception seem to be powerfully stimulated by the alternate stretching and relaxing of the nerves [and blood vessels] attached posteriorly to the eye.

J. L. M.

Complete Aniridia with Posterior Polar Cataracts, Complicated by High Myopia and Buphthalmos.—H. O. Reik, Baltimore.—*Jour. of E. E. and T. Dis.*, January-February, 1903.

A girl of 16 with these congenital abnormalities could never see well. R. V., fingers at 3 feet, not improvable; L. V., 2-200, 5-200 with -3. G. T.=high normal, glaucomatous cupping, 2 mm., of the discs. The right lens absorbed slowly (three needlings); discission later, of a capsular band, was followed by a prolonged attack of acute glaucoma. Later the left lens was needled; in three days it was completely clouded and a cortical mass protruded into the anterior chamber. There was no pain and little or no increase of tension. No change occurred for three weeks, when extraction was easily accomplished with saline irrigation; glasses give R.V. 12-200, L. V. 25-200.

A history of heredity is given. A rather hasty review of the English literature revealed but one other case of aniridia with posterior polar cataract in which an operation was performed; that was successful, but there was no complication of myopia nor glaucoma.

"An attack of acute glaucoma following discission of the capsule in an eye without any trace of iris or of lens substance is, so far as I know, a previously unheard-of event. The diagnosis is confirmed by another ophthalmologist." J. L. M

Rheumatism of the Nose (Rhinitis Rheumatica).

—W. Freudenthal, New York.—*Ann. of Otol., Rhin. and Lar.*, May, 1902.

This class of diseases of the nose was first described in 1894 by Dr. Freudenthal. Sendziak (*Klin. Vortrage aus dem Gebiete der Otol. u. Phar.-Lar.* (Haug's) 1899) is the only author who has published similar cases. Freudenthal recites the first case in his original paper and gives four new ones, with allusion to two more which he has on record. Case 1.—During attacks of acute articular rheumatism the nose became painful and occluded. Case 2.—Obstructive congestion of the right nasal cavity with intense "neuralgic pains" which radiated from the nose following facial eczema, which had spread to the nares. No cause could be found, but she had long been a sufferer from rheumatism, felt better as soon as warm weather set in. Anti-rheumatic treatment gave prompt relief. Case 3.—During north and east winds has had pains in the nose and supra-orbital nerve, with profuse coryza, the nasal mucous membrane being markedly congested and swollen—but normal between attacks. Case 4.—On the outside of the nose, < l., a sensitive, red area. The nasal mucosa is dark reddish, very sensitive near the middle turbinal, corresponding to a similar place on the outside. The nasal passages are enlarged, worse in cold weather. Slight pains in the limbs when the weather changes. Case 5.—A hard swelling on the dorsum nasi, < r., the right middle turbinal was hypertrophied and congested; the nasal mucosa generally was pale and atrophic. Often had pain in the nose—< in wet weather. Under anti-rheumatic treatment the external swelling disappeared permanently (two years ago) in three weeks, but the pain and the

turbinal swelling returned several times during inclement weather. Cases 6 and 7.—Pronounced rheumatic arthritis ; it was repeatedly observed that the pains in the joints were preceded by exacerbations in the turbinated bodies of the nose, which at such times usually showed a marked hyperæmia and congestion. Similar conditions have been reported of late from the clinic of Prof. Senator of Berlin by Dr. Menzer.—(*Berlin Klin. Wochenschr.*, 1901, p. 40.)

We have no right to call any coccus the specific organism of rheumatism. Whatever the cause of rheumatism may be, it shows itself in the nose as well as in other parts of the human organism, and appears both as an acute and chronic affection.

J. L. M.

Temperature after Mastoid Operation—Analysis of 100 Cases.—Thomas J. Harris, New York.—*Ann. of Otol., Rhin. and Lar.*, May, 1902.

He concluded : (1) Post-operative temperature of moderate amount is customary in mastoiditis. (2) The cause of it has not yet been definitely determined. (3) Without other symptoms, it is without significance and should not be a source of anxiety.

J. L. M.

Worth's Operation for Advancement of a Rectus Muscle to Cure Squint.—Claud Worth, London.—*Ann. of Oph.*, July, 1902.

The instruments required are : Speculum, straight blunt-pointed squint scissors, toothed forceps, Prince's advancement forceps, needleholder with jaws suited to the curve of the needle, two very sharp curved needles, and two sutures. It is very important that the suture material be thick ; the thin stuff sold as "eye silk" cuts like a knife.

The author operates under cocain (10 per cent. drops, or the powder), but chloroform for children, with adrenalin, and a drop or two of these occasionally during the operation. Every few minutes irrigate the cornea, so that it will not dry. The conjunctival sac is thoroughly cleansed with boric acid.

Incise the conjunctiva about half an inch vertically, the middle of the incision close to the cornea ; make a similar incision

through Tenon's capsule, exposing the insertion of the tendon. The female blade of a Prince's advancement forceps is now passed under the tendon, after the manner of a tenotomy hook, the male blade being superficial to the conjunctiva, and tendon, capsule of Tenon, and conjunctiva are all firmly clamped together, with their relations undisturbed, except for the retraction of the membranes. The tendon, and a few little fibrous bands beneath the tendon, are now divided with scissors at their insertion into the sclerotic. The Prince's forceps holding the tendon, capsule, and conjunctiva, can now easily be lifted up, so as to get a good view of the underside of the muscle.

A vertical suture includes conjunctiva, capsule, and the upper fourth of the muscle, and a symmetrical one, the lower fourth of its width, with the tendinous expansions. From each knot the needle pierces the muscle about a millimeter further from the cornea and on a level with the knot, and the thread is carried beneath the lower blade of the Prince's forceps nearly to the corneal margin, where it passes outward through the tough circumcorneal fibrous tissue, and is temporarily tied with a loose single hitch to the free end from the knot. The end of the muscle, with capsule and conjunctiva, is then cut off with scissors behind the Prince forceps, and the gap is closed by tightening and tying the two sutures so that the eyeball is rotated into its correct position, and the end of the muscle is brought nearly to the corneal margin. The longitudinal position on the muscle of the first knots—the vertical sutures—varies according to the degree of rotation required. In operating under cocaine, no over-correction is necessary; the immediate effect is the permanent result. Under a general anæsthetic the eyes temporarily diverge or converge, so the angle of deviation must be borne in mind, and the eye rotated about that degree.

If the deviation is not over 20° , Worth advances without the corresponding tenotomy. With much higher degrees he usually combines tenotomy of the internus with advancement of the externus, to avoid retraction of the globe and narrowing of the palpebral fissure.

"As the middle part of the muscle is not included in the sutures, its main blood supply is not interfered with." He has had, so far, no relapse from thus advancing the externus. "With convergent squint there is not infrequently a slight vertical devi-

ation also. If this is not too great, it may be corrected at the time of the operation. If the operated eye deviates downward, the sutures should be so placed as to attach the muscle end at a somewhat lower level near the corneal margin. If this eye deviates upward, the muscle end should be attached at a slightly higher level. It is easy to produce a vertical effect of four or five degrees in this way. In this case, of course, a rotation about a fore-and-aft axis is also produced. In a case in which the operation is performed merely for its cosmetic effect, this is of no consequence. In a case, however, in which I have previously trained the fusion faculty with the amblyoscope, the 'desire' for binocular vision is quite able to overcome this axial rotation.

"In the interests of binocular vision, the eyes are able to overcome a considerable horizontal deviation or axial rotation, but they are seldom able to overcome a vertical deviation if this exceeds about three degrees."

J. L. M.

Pathogenesis of Glaucoma.—M. Uribe Troncoso, Mexico.—Transl. by A. B. Hale, *Ann. of Ophth.*, July, 1902.

A very interesting and suggestive paper, to which justice cannot be done by an abstract. Dr. Troncoso has studied the quality of the aqueous humor by chemical analysis in normal eyes, in primitive or essential glaucoma, after iridectomy, in chronic simple, in secondary, and in experimental glaucoma. In nineteen cases of glaucomatous aqueous humor, the density was higher than the normal; it was also higher than the aqueous of interstitial keratitis and cataract, and of rheumatic iridochoroiditis. Changes in the vessel-wall constitute some of the principal and characteristic lesions in glaucoma. These lesions suffice to explain the passage of albumin from the blood to the aqueous and vitreous.

"Hypertension is a symptom subordinate to the difficulty of exosmosis when a liquid is more albuminous than the normal." Hypertension is produced either by increased difficulty in excretion of aqueous loaded with albumin, or mechanically by iris adhesions at the filtration angle. In glaucoma albumin is almost 'exclusively' present, resulting from some vascular disturbance similar to that seen in interstitial keratitis. The quantity of aqueous humor in glaucoma is less than normal. The difference

between the hypertonicity of serous iritis and glaucoma lies essentially in the involvement of the vitreous, which is increased in volume (œdema) through the escape of albumin from the normally sclerosed retinal vessels. In the adult the nutrition of the vitreous depends solely upon the retinal vessels. In glaucoma, the intracellular spaces of the vitreous are completely closed by a thickening of the hyaline substance of the cells, and these contents are forced to accumulate between the lamellæ, where, not finding exit, they stagnate. This accounts for the increased size of the vitreous.

Admitting the evident rôle of the vitreous in glaucoma, all the symptoms are readily understood and united. Either as the result of a senile arteriosclerosis, of an arthritis, gout, etc., or as a result of a localized endarteritis within the eyeball, the vessel-walls become permeable to the albumin, which, mixed with the contents of the anterior chamber, retard the proper filtration at the filtration angle. When the secretion of the albumin reaches a certain degree, the excretory passages still intact become insufficient, the intra-ocular tension rises until the augmentation of new aqueous equalizes the tension within the vessels, when secretion of aqueous is checked. Somewhat before this the first symptoms of glaucoma appear.

Attacks of simple glaucoma are nearly always associated with some mental emotion, a reflex congestion of the veins of the head, with insomnia, etc., producing a vasomotor dilatation showing itself chiefly in the vessels of the ciliary body. These disturbances disappear with the causes that produce them, the albumin disappears from the aqueous, and the excretion is re-established; but when they reappear they become severer, the vascular disturbance progresses by degrees, till suddenly an acute attack of glaucoma breaks out. As in the kidney, this albumin is intermittent; it diminishes or ceases before and after the attacks, but when, after recurring, it tends to become permanent. After several attacks the vitreous does not again become normal; the root of the iris remains pressed against the sclerocorneal edge, and, with the irritation from the albumin abnormally present, tends to bring about the adhesion of Knies. Influenced by the albumin, all the tissues bathed in aqueous suffer what may be called a chronic fibrous sclerosis—like chronic endarteritis. A fine fibrous translucent membrane is formed, covering the an-

terior surface of the iris, the pupil, the sclerocorneal edge, the meshes of which it fills, and extends over the surface of Desce-met's membrane. He showed later, in the chapter on experi-mental glaucoma, how this may be experimentally produced.

This albumin irritates the deeper tissues as well, particularly the papilla, producing congestion and inflammation before the excavation appears.

In subacute and chronic glaucoma all these phenomena are produced slowly.

The intensity and gravity of the attack in hæmorrhagic glaucoma stand in due relation to the quantity of albumin excreted at any given moment.

J. L. M.

BOOK REVIEWS.

THE REFRACTION AND MOTILITY OF THE EYE, FOR STUDENTS AND PRACTITIONERS. By WILLIAM NORWOOD SUTER, M. D., Assistant Surgeon, Eye, Ear and Throat Hospital, Washington, D. C. Illustrated with 101 engravings in the text and 4 plates in colors and monochrome. Pp. 390. Lea Brothers & Co., Philadephia and New York, 1903.

One of the best text-books on these topics we have seen. Simple enough for the beginner in ophthalmology, yet advanced enough for the student and practitioner. Clearly expressed, well arranged, condensed, and up to date. The typography, illustrations, paper, and binding are of the best.

J. L. M.

THE JOURNAL OF OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY.

EDITOR,

JOHN L. MOFFAT, M. D.

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A. W. PALMER, M. D.

EDITORIAL.

SCIENTIFIC OPHTHALMIC TERMINOLOGY.

IF science stands for anything it is for exactness. As Dr. Suker suggests: * "As soon as the specific terminology of any science is faulty as to its application or inconsistent with the root meanings of the terms employed" there is great danger that "the views derived from the nomenclature will run to faulty deductions; or it [faulty terminology] will detract from the intrinsic value of this system of correlated facts."

Our terms should be unequivocal, and as they are definitions their meaning should be deducible from their spelling. Strict adherence to this principle will have an important influence upon the development of the scientific mind. The new terms will be readily accepted by students, and should be adopted by teachers and writers who profess to be leaders.

The old word will still fall unwittingly from our tongue or pen for some time to come, but can be corrected when writing a text-book or a lecture or editing a magazine.

"Among our responsibilities as members of one of the learned professions is that of being scholarly and of exercising an elevating influence upon the language." †

English is a living, and therefore a changing, growing, language; our responsibility is therefore all the greater. Nowadays the dictionary follows rather than leads in the usage of words. The tendency, especially in this country, is to shorter words more simply spelled, and spelling reform has come to

* *Ophthalmic Record* August, 1903, p. 368.

† Presidential Address by the writer, *No. Am. J. of Hom.*, August, 1903, p. 484.

stay; one of our duties is to hold it in check where it touches our scientific terminology.

It is particularly encouraging to have Chicago advocate what the so-called Western spirit would style redundant syllabication: hypermetropia for hyperopia, hypometropia or brachymetropia for myopia, and presbymetropia for presbyopia.

Dr. Suker's position is well taken and commands our support. As he says: "Any term intended to express a distinct type of refractive error should incorporate within itself or its compounds the root *metron*." Of course combined with the root *op* or *ops*.

Myopia will cling with the most tenacity, especially because of its abbreviation M. Hopeless as the task seems there is a possibility of substituting for it in formulæ, etc., the B. of brachymetropia.

For this reason it would be better to settle upon this term instead of upon hypometropia, although the latter is the better one for every reason except its abbreviation. Myopia, whether axial or refractive, is not a condition of "short measure of the eye;" on the contrary, it is the focus that is short, so brachymetropia does not satisfy Dr. Suker's criterion.

In this connection we renew our plea for similar accuracy by substituting the terms astigmia for astigmatism and astigmatic for astigmatic.

Upon assuming the editorship of this Journal three years ago* we urged this reform and gave notice that we would edit all contributions by making these substitutions. Dr. Georges Martin called attention in the *Annales d'Oculistique*, for December, 1895, to Rev. Dr. Whewell's error when the latter coined the term astigmatism; instead of basing the new word upon the Greek *stigma, atis*, which means a point in the sense of a prick or sign, he should have derived it from the next word in the lexicon, *stigma, es*, meaning a mathematical point. From this, with *a* privative, astigmia is the proper English form as aponia comes from *a* and *phone, es*.

Let each of us whenever writing, lecturing and speaking use these correct terms and make these corrections in all manuscripts sent us for publication. For quite a while to come it will be necessary to follow the B. with an explanatory M. in parenthesis.

* Editorial, JOUR OF OPH., OTOL., & LAR., Jan. 1901, p. 11.

Had Donders had the courage to use brachymetropia and hypermetropia persistently these terms would have been in general use to-day. Let us be sure we are right then go ahead with the courage of our convictions and a vivid sense of this duty. The way to do a thing is to do it. If you want a thing done do it yourself.

J. L. M.

A CASE OF BILATERAL HYPERPLASTIC HÆMORRHAGIC RETINITIS PRIMARILY SIMULATING PERSISTENT HYALOID ARTERIES.

EDWARD J. BERNSTEIN, M. D.,

Baltimore, Md.

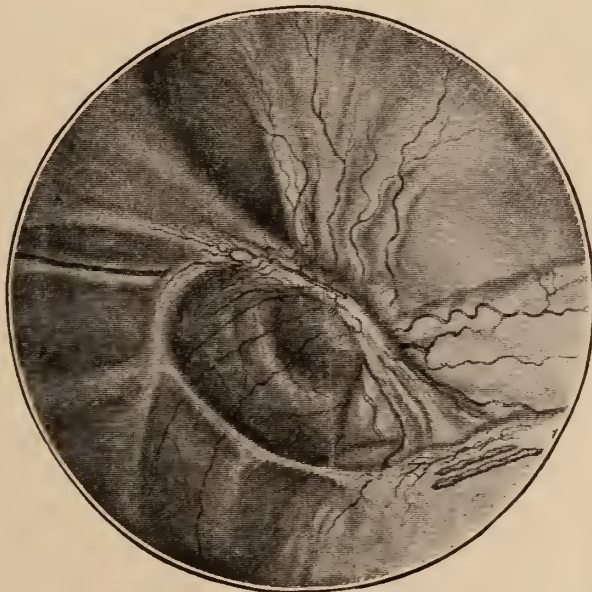
THIS case is reported because every stage and change was under observation from the first hæmorrhage and temporary loss of sight to the completion.

Wm. W., aged sixteen, was sent to me October 12, 1900, by Dr. Randolph Winslow, complaining that the vision in the right eye had been rapidly failing since early in the previous month. R. V. counting fingers at 2m., but only in certain directions. L. V = 6/24 with + 4D = 6/12. Except for an external squint of 30° in the left eye and a widely dilated pupil nothing abnormal was to be seen externally. History of comparatively good sight during the past years, indeed it is known that he read his books as late as August. Outside of this, the boy is in good health; urinary analysis, blood and hæmoglobin test perfectly normal. He is the third child of healthy parents with no history of syphilis, gout, rheumatism or other dyscrasia.

Ophthalmoscopically the right eye showed clear media, except for thick fibrous band passing from below the optic nerve and slightly to the nasal side, through the axis of the vitreous to within a few mm. of the posterior capsule of the lens, where it disappeared downwards toward the ora serata. Through the upper layers of this band a large pulsating blood-vessel could be readily seen. In the left eye, in which vision was still fairly good (as above), there were also clear media, except for a similar thick band emerging from just above the disc and projecting about 10 D. into the vitreous, where it branched dichotomously upward and downward (carrying with each branch a small artery), and was finally lost in the

extreme periphery. Temporally there were three or four small areas of choroidal degeneration, very much like choroiditis disseminata; these spots are still shown in the accompanying drawing. I examined him very carefully and we were then quite sure that we had to do with a case of double persistent hyaloid artery, and that the boy was mistaken as to his vision in the one eye prior to his coming to me; we thought his vision had been bad congenitally and that he had all along been using the left eye.

Cases of persistent hyaloid artery are so rare, especially when double, that I wished a drawing made, but while wait-



Right Eye.

ing for the artist to get time to do this, several weeks elapsed. In the meantime, that is, on the first of December, he returned with the story of an injury to his right eye (the bad one). While playing "leap-frog" he suddenly felt a sensation of fullness in that eye and found that the little vision he had left when first seen, was gone. The sight in his good eye was also diminished considerably. He was led to my office and on examination it was found that he had a large hæmorrhage into the vitreous of the right eye, completely shutting out the fundus. There was also a small extravasation of blood in the left eye just at the spot where the band divided. He was put upon pot. iod. in increasing doses together with full doses of extract of ergot and pilocarpine and was kept in bed.

In two weeks the eyes had cleared up sufficiently to get a fairly good view of the fundus. The right eye now showed a

decided increase in the thickness of the bands first seen and a new one springing from the temporal side of the top branch. The lower portion of the fundus was still covered with blood; when this was clearing up a small patch of detached retina was seen there, the lower band of tissue was shorter and thicker, giving me the impression that in the formation of this structure and as it became firmer contraction took place, the retinal portion mechanically pulling that membrane along with it—later observation seemed to justify this supposition. The eye never fully cleared up, for very soon after this he had another extravasation of blood in the eye followed by still greater loss of



Left Eye.

vision. After each attack there was a clearing of the media when new bands of this same fibrous looking structure would be disclosed to view, until finally the picture was as shown in the drawings. As will be seen by that of the right eye, the retinal detachment is now quite extensive, covering fully a third of the fundus. Fibrous bands run in all directions, being accompanied by blood-vessels in many instances.

Mr. Becker has shown pretty cleverly that these lie in various planes. The first hæmorrhage in the left eye occurred at the time of the second attack in the right; the drawing still shows some unabsorbed blood (which has assumed the shape of a fish's tail) lying on the thick central band; several others (represented by black splotches) are to be seen in other parts of the fundus. In some places newly formed blood-vessels spring forward into the vitreous, especially is this so in the

upper and outer part. As will be seen, some of the bands are as thin as veils while others are perfectly dense. In the right eye the disc can still be seen, indistinctly it is true as through a haze, while in the left eye it is hidden entirely.

At no time did there seem to be any inflammation as described by Proebsting or Von Hippel, or such as Fehr reported in the *Monat. f. Augenh.* a short time ago. In these cases the initial lesion somewhat resembled retinitis albuminurica. The pathology and the literature of this subject have been most carefully gone over by Weeks.—*New York Eye and Ear Hospital Reports.*

The boy has been seen within the past six months, and is now totally blind, without even light perception. No view of fundus is now possible owing to exudation.

There is one thought which presents itself to our consideration from a study of this case, viz., that if we had not been enabled to keep this boy under our observation as we had, we should doubtless have reported it as a case of persistent hyaloid arteries. In reading von Hippel's article in Graefes-Saemisch (1900 ed.) this idea is thrust home, that many of the cases herein reported as congenital anomalies are in reality but the result of inflammatory conditions. This is notably so in the cases of Unterharnscheidt and of Eversbusch and Hersing. Of the latter cases the following is quoted "sehr ungewöhnliche Fälle, in welchen die Netzhaut an der Papille durch den nach vorn ziehenden strang zelartig abgehoben war" reminds one strongly of the condition described as found in the right eye of my patient.

1511 Madison Avenue.

A CONTRIBUTION TO THE STUDY OF MULTIPLE AND COMPLEX PARALYSES OF THE MUSCLES OF THE EYEBALL.*

DR. A. YVERT,

Dijon.

PARALYSES of the ocular muscles, when simple and limited to a single pair of nerves, are ordinarily easy enough to diagnose and the symptoms are clear. But in practice complicated cases may occur: sometimes the paralysis is incomplete, that is to say limited to certain branches of a nerve pair; sometimes several pairs are attacked simultaneously; we even see certain cases, more complex still, in which one nerve pair is incompletely paralyzed and the functions of another are totally abolished.

Varied examples of all these combinations may be found in ophthalmic literature. There is one, however, which we observed nearly thirty years ago, at the beginning of our special studies in ophthalmology, whose importance we think deserves consideration. It is so rare that Dr. Galezowski had not yet encountered it in his immense practice; and we should confess that our diagnosis was doubted by him until he was enabled to verify the symptoms himself.

We will supplement this case, such as we have collected it, with the reflections that it suggested to us in 1876 without changing one word of them.

CASE.

Paralysis of the left Fourth Nerve. Incomplete paralysis of the Third Nerve of the same side affecting its branches to the inferior oblique, to the levator palpebræ superioris, to the muscle of accommodation and to the internal sphincter of the iris.

*Translated from *Recueil d'Ophthalmologie*, July, 1903, by John L. Moffat.

M. Pel, aged forty, came to Dr. Galezowski September 16, 1876, complaining that he had noticed for a month difficulty in raising the left upper lid which would fall again despite all his efforts to open the eye. For the last three weeks he saw with difficulty toward the left. Could not use the left eye to read nor to see near objects. In the last eight days he sees objects double in certain positions; what troubles him particularly is that in the street he does not know where to put his feet; in fact he cannot tell exactly what is in front of him: the pavement appears oblique and nearer or farther than he supposes it, so that he stumbles every moment. He even sees two persons where there is but one, and in wishing to pass between them he strikes just the one he thinks he is avoiding. It is this that sent him to the doctor, for he has no pain.

Upon proceeding to the examination our attention is at once attracted by the left eye. We notice a moderately pronounced ptosis; the upper lid covers only a part of the globe, and the patient succeeds in raising it slightly only after many efforts. There is medium dilatation of the pupil, nearly double in diameter to that of the right eye. The patient cannot see near objects nor read ordinary print. He complains of a trouble in every respect like a case of atropinization.

The left eye turns perfectly in and out, but up and down the movements seem to us a little more limited than on the right side. In none of them does the patient complain of diplopia.

We then resort to the special proceeding practiced every day in the study of ocular paralyses: the patient looks at a lighted candle in a dark room with a red glass before his left eye. The following are the findings, and we cannot emphasize them too strongly. The candle about three meters in front of the patient, carried alternately to the right and left in the horizontal plane appears single; at each of the several times that this is repeated M. Pel declares that he sees but one candle.

If now we hold the candle above the horizontal plane and say a meter to the left of the antero-posterior plane of the patient's body he immediately declares that he sees two candles, the red one below to the left seems less distant than the yellow one and is oblique from above downward and from right to left. Further, the distance between the two images shows the following characteristics which we will study from above downward then from right to left.

We have already said that in the middle of the horizontal plane the images are blended; a little below the images sepa-

rate, the red one being oblique, and both these symptoms constantly increase as the candle is lowered further. At the same time their difference in distance antero-posteriorly becomes more pronounced; the maximum is reached when the candle is on the floor.

The variations in the transverse direction are no less obvious: when the candle is at the patient's extreme left the symptoms we have just analyzed from above downward are at their maximum, and they diminish insensibly from left to right until the candle is a little to the right of the patient's antero-posterior median plane when he declares that he can see no more than a single candle.

These first symptoms sum up thus: A single candle in the middle of the horizontal plane; two candles lower down whose distance and inclination increase toward the floor. Similarly, a single candle to the right; two, more and more indistinct as the test is carried to the left.

We will find the same symptoms, but in quite the reverse direction, upon passing the candle in front of the eyes above the horizontal plane. In fact, if we carry it only a few centimeters above this plane, taking good care to keep it always to the left, the patient sees two images, the red higher, to the left, farther off, and slightly inclined downward and to the right, in respect to the yellow. Moreover, these symptoms change when the light is carried upward and from right to left.

In short, the images are the more distinct and the red one more inclined the more the candle is elevated above the horizontal plane and to the patient's left. For here again, the diplopia disappears when the candle is a little to the right of the antero-posterior median plane of the body.

We have just said that throughout the horizontal plane M. Pel saw only one candle. This expression is not strictly proper; his statement was rather that he saw the images superimposed, in the same antero-posterior plane but at different distances from him.

These symptoms, thus established by means of the red glass, enable us, as we will presently prove, to diagnose a simultaneous paralysis of the superior and inferior obliques. How about the etiology?

Now, we have not found in M. Pel any sign of ataxia, even the slightest; no syphilitic history; not a trace of arthritism. He has never had any blows on the head. In youth was subject to sick headaches, but has had none in the last five years.

Finally he confessed that he had sometimes slept with the window open but had never been sensible of it.

Let us see now with what affection we have to do and how we have been able to assert this diagnosis.

It is very evident, to begin with, that the ptosis since it is not congenital, is dependent upon paralysis of the branch of the third pair which supplies the elevator muscle of this lid.

The dilatation of the pupil and the loss of accommodative power in the left eye are also most readily explained by a paralysis of the branches of the third nerve which supply, one the internal sphincter of the iris and the other the ciliary muscle, since M. Pel affirms that he has never had atropin in the eye.

The entire absence of diplopia with crossed images when the candle is carried before the eyes on the horizontal plane, assured us that the fibers supplying the right internus are not affected.

Upon what then do we base the diagnosis of paralysis of the inferior oblique? It rests simply upon our knowledge of the physiological functions of this muscle, which is elevator and abductor of the eyeball and which tends to incline the vertical meridian outward. When it is paralyzed the center of the cornea points in and down; upon fixing an object above the horizontal plane homonymous double images will appear, and the one belonging to the paralyzed eye will be above the other.

On the contrary, when the superior oblique, which is depressor and abductor and tends to incline the vertical meridian inward, is paralyzed, diplopia appears only when fixation is below the horizontal plane. The diplopia will also be homonymous, the image in the affected eye will appear below the other, and often nearer, as Foster has explained.

In each case the image of the impaired eye will be oblique to the true image and in the contrary direction for each muscle.

Now, do we not find here all the symptoms of our case? Above, we had all the classic signs of paralysis of the inferior oblique; below the horizontal plane, all those of the superior oblique, without exception. As to why we say the paralysis affected the oblique muscles of the left eye, it is very simple; the diplopia occurs only on the left side, and disappears on the right.

There remains one other point of this interesting case to be elucidated; the etiology. To what can we attribute so complex a lesion? In our patient we found none of the usual

causes of these paralyses, neither syphilis, rheumatism nor a single symptom of a cerebral affection. We cannot call it a paralysis *a frigore*; for on the one hand he has not had sufficient chill, and on the other that particular paralysis is much less complicated and more often affects only the sixth nerve. Neither has he had any traumatism.

But one thing could explain such symptoms: incipient locomotor ataxia whose first symptoms are attacking the motor system of the eyeball. (This is not the first time that ophthalmology enables one thus to make a preventive diagnosis.)

Dr. Galezowski came to this conclusion, and so put the patient at once upon general treatment with pills of nitrate of silver and iodide of potassium, and local treatment of fly blisters applied around the left eye.

PROTONUCLEIN (SPECIAL) IN CORNEAL OPACITIES.

DAVID A. STRICKLER, M. D.,

Denver, Colo.

IN the spring of 1899 Dr. Soulé, then of Freeport, Ill., now of Kansas City, Mo., reported a case of marked corneal opacity of many years standing almost entirely relieved by the local application of protonuclein (special) with massage. The case was of the type that gave little to be expected from any treatment theretofore used and left a strong impression upon my mind.

In August, 1899, I had an opportunity to give it a trial in Miss Mary S., aged twenty-nine years, who gave a history of granular lids with pannus from ten to fourteen years of age. The granular condition of the lids disappeared with little apparent damage, but the corneal opacities were very marked, amounting almost to a leucoma, with here and there a little clearer areas of both eyes. She had been treated in various ways by different oculists but was growing gradually worse, vision right eye 10/200, left eye counts fingers at five feet. I dusted protonuclein (special) on the eyes, and applied the massage directly to the cornea. The applications were made daily for two months, and later at longer intervals, with the result that at the end of three months she could read the names of street cars from the sidewalk with her left eye. The eyes had improved markedly in appearance in the meantime.

In November, 1900, Miss Anna B., aged twenty, called for treatment, giving a history of acute inflammations of the left eye once or twice a year for seven or eight years past. The attacks were attended by very severe pain and lasted about a week at a time. There was no inflammation at the time of her calling, but dimness of vision, that she had been informed by her oculist could not be benefited was complained of. I found a nebulous cornea, with vision of 20/100. Proto-

nuclein (special) with massage through the lids daily for one month gave her vision of 20/50, a much clearer cornea, and no further attacks of inflammation have occurred. Have never determined the nature of her former inflammations.

In June, 1901, Miss Florence S., aged twenty-three, consulted me for the most aggravated attack of phlyctenular keratitis I ever witnessed. The cornea became one fleshy mass and the vision was practically nil for a time, having only light perception. The subject was tubercular and at one time it looked almost as though the eye would be lost from corneal degeneration. With improved general condition the inflammation left the eye, but it left a beautiful young woman with an unsightly leucomatous cornea. Four months' treatment with protonuclein (special) and massage left but a faint cloudiness of the cornea, seen only upon close scrutiny, and a vision sufficient for reading common print.

August 12, 1902, Henry M., aged forty-one, a stonecutter, gave a history of foreign body in the cornea two days before. The body, probably a bit of steel, was removed by a whisk of a dirty broom. When first seen within forty-eight hours of injury I found an ulcer on the lower and outer quadrant of the cornea, attended by a goodly collection of pus in the anterior chamber—hypopyon. In spite of treatment the ulcer traveled rapidly to the center of the cornea, carrying with it a trail of pus in the anterior chamber and threatening destruction of the eye.

Thorough curettage followed by the actual cautery checked the ulcer, but left a central opacity of the cornea. When the inflammation had subsided the vision was 14/100. Under protonuclein (special) with massage the vision improved to 28/20 scant in four months, and was his better eye.

These are by no means all of the cases upon whom I have used with success this remedy, but they belong to different classes and may serve to indicate somewhat the scope of the remedy. One feature noted in all of the cases was that tests made immediately before and immediately after the treatment, showed vision improved at once by the treatment, often falling back somewhat between treatments.

Of the *modus operandi* of the treatment I am not prepared to speak. That it benefits cases that I have heretofore considered hopeless I no longer question. The last case cited should prove to the most skeptical that it has a definite place in the armamentarium of the oculist.

OTITIS MEDIA PURULENTA ACUTA WITH COMPLICATIONS.

S. G. A. BROWN, M. D.,

Shippensburg, Penn.

THE following case is not reported because of any brilliant technique pursued by the author in its treatment, but rather to show that some cases get symptomatically well in spite of their surroundings and the doctor.

Mr. L W. æt. thirty-seven, occupation farm laborer, contracted a severe cold which manifested itself principally in the nose and nasopharynx. In the course of forty-eight hours the right Eustachian tube evidently became involved, as he complained of great pain and fullness in and about the right ear. He then deemed it advisable to consult a physician, who instilled tincture iodin into the ear and gave him the proverbial panacea, quinia, internally.

The pain steadily increasing and being accompanied now by severe vertigo and much chilliness, he was advised to consult the author. Upon careful examination, no involvement of the mastoid could be found. The drum membrane was bulging very strongly, especially in its anterior segment. The surface was opaque, covered with slight exudate of serum. There was a light mucus discharge from the nose, pharynx deeply flushed, dry and rough. His temperature was 104° F., pulse 86, the latter probably having been accelerated by the four-mile walk to my office.

The patient being informed that the drum membrane should be incised, strenuously objected and would consider nothing which savored of local treatment, whatever. Prescribed hepar 12x and told him to report next day. Two days later patient again came to the office and said his ear was cured, that the medicine acted like magic, etc., but that he could not close his right eye and that the vertigo was extremely annoying.

It was noticed that his face was rather smooth, all wrinkles, even those of the forehead, being obliterated; mouth drawn slightly to left (sound) side; inability to dilate right nostril; unable to close right eye; ulceration of corneal conjunctiva. The ear likewise presented some points of interest. The membrana tympani was red and fissured, and covered with macerated epithelium and exudate which partially filled the external auditory canal. After carefully cleansing same, the drum membrane was found ruptured in its antero-inferior quadrant. Vertigo was present, especially on endeavoring to close the eyes (could close the left) with inclination to fall toward the right, which indicated, of course, involvement of the labyrinth. Bone conduction was increased in the right ear, by placing tuning-fork on the vertex, but not heard full length of time. Microscopic examination of exudate revealed streptococci in abundance.

We had here evidently a case of purulent inflammation of the middle ear complicated with a peripheral paralysis involving the facial nerve. When we remember that the roots of the fifth nerve pass by the superior border of the petrous portion of the temporal bone and that the facial nerve enters the internal auditory meatus with the auditory nerve, entering the aqueductus Fallopii and following its course through the petrous portion of the temporal bone; that in its course it runs by the internal wall of the tympanum above the fenestra ovalis; and that the supraorbital branches of the ophthalmic division of the fifth join with filaments of the facial nerve, we could feel reasonably sure that the fifth nerve was paralyzed, especially the part containing fibers of the sympathetic with involvement of the orbicular branch of the seventh. Then pressure within the tympanum affected not only these nerve branches but the semilunar canals as well. Pus might have reached the labyrinth through the vascular and nervous channels by way of the window of the vestibule.

The lagophthalmus or inability to close the eyelids was the result of paralysis of the orbicularis muscle associated with facial paralysis. The cornea suffering for want of protection from the eyelids became inflamed and ulcerated. Fortunately there was no germ infection.

Treatment consisted in thoroughly cleansing and disinfecting the external auditory canal and making a free incision from the rupture in the membrane to its lower border. Politzerization was employed to force any detritus out of the

tympanic cavity. This was followed by antiseptic medicated vapor massage of the tympanum through the Eustachian tube by means of a globe nebulizer. After again thoroughly cleaning the external auditory canal, aristol was lightly insufflated and the canal loosely packed with antiseptic gauze. Only one repetition of the above was found necessary to effect a cure. Hepar 12x was given and later causticum. Patient is apparently well in every particular, and hearing almost normal. Is it not almost miraculous that more serious complications did not arise?

SYMPOSIUM.

1. *What is Your Treatment for Eczema Aurium? What for Seborrhæic Eczema Confined to the External Meatus?*
2. *What Remedies, aside from Local Treatment, Have you Found most useful for Catarrhal Aphonia?*

C. GURNEE FELLOWS (Chicago): 1.—For Eczema Aurium: keep the parts clean with dry mopping, or with a cotton swab slightly moistened with dioxygen, and the use of some protecting and stimulating ointment, such as the yellow oxide of mercury, chrysophanic acid or resinol. Internally, arsenic, rhus, merc. iod. et kali iod., etc.

For Seborrhæic Eczema: swab until completely clean with dioxygen, follow by thorough painting with 5 per cent. to 10 per cent. formalin. Have found this almost specific in a number of cases within the last two or three years.

2. Aside from the local treatment I believe I have found the best results from kali caust. 3x, with aconite 3x, argentum nitricum 3x, hepar 6x and phosphorus 3x.

THOMAS M. STEWART (Cincinnati): 1.—For Eczema Aurium: Hot salt water compresses applied fifteen minutes day and evening; before and after that the ear is washed with suds made with Tonka Talpa toilet soap, and some of the suds may be left to dry on with beneficial results. Internally: graphites 6x, arsenicum iodatum 3x, ferrum picricum 6x, psorinum 200x have given me the best results.

For Seborrhæic Eczema: Dissect out the cyst. Hunt for and scrape any carious spot in the bone, disinfect with bichloride of mercury 1:1000, then with alcohol. Insert a cotton plug wet with formalin 1:500. In such cases the general nutrition of the patient needs particular attention; this is a point that should never be overlooked in any chronic or troublesome condition.

2. Mercurius biniodide 3x mixed with phosphorus 3x, a

medicated disk every half hour or hour. One drop of dilute nitric acid in a tablespoonful of water every two hours. Erythroxyton coca tincture, one drop in a teaspoonful of water every fifteen minutes for two hours before singing or speaking. Gelsemium ix, three drops in one-half teaspoonful of water every two hours. The faradic current and the high frequency current are often very useful.

E. H. LINNELL (Norwich, Conn.): 1.—My treatment of eczema aurium is limited mostly to the prescription of the indicated homœopathic remedy; I prescribe rhus, graphites and calcarea carb. perhaps more frequently than others. Locally for cleanliness and soothing: boric acid in solution, hydrozone, witch-hazel or calendula.

2. In catarrhal aphonia I derive more satisfaction from hepar, causticum and phosphorus than from any other remedies.

FRANCIS B. KELLOGG:—A 1 per cent. to 2 per cent. ointment of hydrarg. ammon. in equal parts of lanolin and vaseline will cure—or failing that, will control—the dry scaly eczema of the auditory canal.

E. D. BROOKS (Ann Arbor): 1.—The few, and mild, cases I have met here have usually yielded to cleanliness and graphites. The peculiar gluey discharge with the accompanying strumous diathesis (frequently shown by blepharitis marginalis) has led me to this prescription. If there be intense itching followed by burning after scratching sulphur will be the remedy.

An unsigned contribution reads: 1.—Keeping the part clean with a peroxide swab relieves most cases promptly. Fowler's solution of arsenic, two drops three times a day, is almost a specific. Sometimes the ordinary preparation of arsenic is better, and sometimes sulphur. If a purulent discharge is the exciting cause add insufflation of powdered boric acid. This trouble is frequently the external evidence of constitutional disease and should be treated with some such drug as phosphorus, pulsatilla, kali iod., or mercury. Some bad cases are associated with marked anæmic symptoms; they should be fed well.

JOHN L. MOFFAT:—Hypostatic electricity cures [?] eczema more rapidly, easily, safely, and surely—in conjunction with the indicated remedy—than anything else within my experience. The results are so much more brilliant than under similar treatment without this form of electricity that it is worth

further trial. In no case so far has it seemed to "suppress" the eruption as do resinol, sugar of lead, etc. Perhaps there would be a greater tendency to relapse if the internal remedy were not also prescribed.

2. Ammonium causticum 3c has seldom failed me. Of course aconite, causticum, phosphorus, the classic remedies, will be in order when called for by their respective symptoms.

PRACTICAL HINTS.

A slight convergent squint may be masked by a high angle gamma, usually in hypermetropic eyes. It may be simulated in a myope with gamma negative.

Open abscesses in the pharynx with the old-fashioned hatchet shape gum lancet; they usually are prominent and displace the blood vessels laterally.

Investigate the condition of the kidneys in all cases of œdema of the uvula, at least those not clearly dependent upon the gouty or rheumatic diathesis.

Chloroform is especially fatal for adenectomy, as the lymphatic diathesis favors its depressing effect upon the heart.

Ethyl bromide must be given to a patient only in a recumbent position. Some of the accidents attributed to it may be due to an impure preparation.

Before operating upon a hæmophiliac give a three weeks' course of medication; a dose three times a day of crotalus horridus, phosphorus; or lachesis. In the phosphorus patient small wounds bleed much; hæmorrhage apt to be bright red; the blood-vessels seem brittle.

In the crotalus patient there is deficiency of fibrin. So with lachesis, but to a less marked degree; to choose between these two a careful study of all the symptoms to be found in the patient is advisable.

Endogenous disease of the eye may be caused by bacterial diseases of single organs, even from a paronychia; there is no general infection in which resultant diseases of the eye have not more or less often been observed.

The eye should be examined in cases of supposed typhoid fever running an atypical course, especially where the Widal is negative. It may prove to be a case of general miliary tuberculosis. Tuberculosis of the choroid may be expected in at least 50 per cent. of the cases of general miliary tuberculosis, and its presence is pathognomonic of that disease, especially if coupled with other less characteristic symptoms and its development can be followed. It may be the first symptom, or may be the only demonstrable focus in the body. The tubercles may be present at any stage of the disease, and sometimes grow so rapidly as to become ophthalmoscopically visible over night.

Gerontoxon in the form of two concentric rings—even in people from twenty-five to forty years—is a sign of arteriosclerosis, gout, rheumatism, or alcohol.

In extracting secondary cataract (if there are no strong adhesions to the iris) one need not fear traction upon the ciliary body, since the capsular sac always comes away without zonula fibers; it is either torn itself or is separated from the zone by the zonula fibers rupturing at the margin of the secondary cataract.

In cases of spontaneous detachment of the retina bear in mind the possibility of a tuberculous tumor of the choroid. A solitary tubercle may lead to detachment of the retina or choroid.

In a number of cases of tabes or paresis an irregular form of pupil has been observed earlier than the Argyll-Robertson symptom.

Dimming of the laryngeal or rhinoscopic mirror may be avoided by means of the "anti-sweat" pencil or crayon that may be found on the counter of some at least of the opticians. We have found it practical; also to prevent steaming of spectacles or eyeglasses in cold weather or when perspiring. It seems like a soap; the mirror, after cleaning, is dulled by rubbing with this pencil (it does not scratch the glass) then polished, when breath will not dull it. W. Downie speaks of it in the *Lancet* for March 1, 1902, with a French name but as made in Glasgow.

In hysterical aphonia an audible cough can almost always be induced; in true paralysis of the vocal cords this would be impossible.

For anæsthesia and ischæmia Darier applies to the eye:
℞ Adrenalin hydrochlorate (1:1000), 0.5; cocain hydrochlorate, 0.1; sterile water, 10.0.

Preserve organic solutions, such as atropin, cocain, scopolamin, adrenalin, etc., by adding a saturated solution of chloretone, twenty minims to the ounce. A dram to the ounce is good, but in one instance a drop of cocain with chloretone a dram to the ounce, instilled for extraction of a foreign body, paralyzed the accommodation for three or four days.

Always take the temperature before an adenoid operation; it may foretell some affection which contraindicates operation.

Never interfere, by digital examination or otherwise, when there is acute inflammation in the naso-pharynx.

Beware of traumatism in the adenoid operation; whether from too much pressure, abnormal anterior curvature of the cervical vertebræ, movement by the patient, undue haste, injury to the posterior border of the septum or to the Eustachian prominences.

Loss of accommodative power is one of the sequelæ of typhoid fever.

After intubation when the canula cannot be dispensed with and it has been worn to the aggregate of eighty hours it is better to make a tracheotomy than run the risk of ulceration and necrosis.

SOCIETIES.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL SOCIETY. Ninth Annual Meeting, Lexington, Ky., April 30, May 1 and 2, 1903.

New Instruments.—DR. CHEVALIER JACKSON, of Pittsburgh, exhibited a skiagraph of the skull; also his emergency thyrotomy canula, an instrument modeled after the ordinary medicine dropper, and used for checking hæmorrhage. His turbinotomes were presented, and the statement made that the operation was done very quickly and did not provoke either immediate or secondary hæmorrhage. He made use of cocain and adrenalin before the operation, and a gauze packing for

twenty-four hours after. In about 5 per cent. of the cases it was necessary to pack again for twenty-four hours.

An adenoid curette with an attachment for preventing the dropping down of a portion of the adenoid into the larynx, was shown; also some chisels for mastoid operations, and an improved trephine.

A transillumination lamp was presented. It was intended to be operated by a 110 volt current without any reduction of the current. If left in the mouth more than a minute it would become uncomfortably hot, but this time was sufficient for the examination. He was disposed to think that much of the present skepticism regarding transillumination arose from the fact that miniature and very inefficient lamps had been commonly used. The intensity of the light could be easily modified as desired by the use of a rheostat.

DR. J. M. RAY, of Louisville, said that mistakes were frequently made in examining the mouth because of the difference in the intensity of the light used. With a very brilliant light, like the one just presented, it was probable that it would pass through an antrum even though the latter were blocked with pus.

DR. C. R. HOLMES, of Cincinnati, thought the point had been well taken about the wrong conclusions likely to be drawn from the use of a light of too great intensity. While it was desirable to have an intense light, this should be capable of regulation at will.

DR. C. G. COAKLEY, of New York, said that he had never tried transilluminations in daylight with such intense illumination; nevertheless he firmly believed that the same amount of illumination could not be used in different persons. If the examination were made in a darkened room a lamp of two or three candle-power would give sufficient illumination, although even with such a lamp it was important to have means for regulating the intensity of the light. With regard to the scissors, he would say that he had not found any scissors which would do the work as well as a snare. The scissors occupied much valuable space. For post-nasal work he would not like to use the ratchet instrument, as the sliding attachment would allow more rapid operating. Some of these so-called hypertrophies were really œdematous masses and could not be secured by a snare without an anæsthetic. The operation with

the snare must be done almost instantaneously because of the attendant pain.

DR. WENDELL C. PHILLIPS, of New York, said he had recently had some experience in this field. He liked the forceps exhibited for removing hypertrophied tissue, but the problem was somewhat different in connection with the inferior turbinal, for, in some instances at least, scissors would not take off the bone. He thought Dr. Jackson had underestimated the importance of secondary hæmorrhage, especially when removing the posterior portion of the inferior turbinated bone. Personally he had had far less trouble in this respect since he had adopted the plan of giving the patient a mild solution of adrenalin with instructions to spray the parts frequently with this solution until after the time for secondary hæmorrhage had gone by.

DR. L. A. COFFIN, of New York, could not understand how the scissors could be opened widely enough to allow of the removal of the turbinal with one clip, and at the same time get into the nostril. Like Dr. Coakley he preferred the use of the snare. Neither primary nor secondary hæmorrhage after operation on the inferior turbinal should be looked upon lightly. For the last few months he had adopted the plan of applying the snare and then putting the patient in another room on his back. From time to time the instrument was given a slight turn, and in time the hypertrophy was removed without bleeding and without pain except on the introduction of the instrument. After the removal of the snare he paid no attention to the portion removed, as it would take care of itself.

DR. JACKSON said that a large experience with his instruments made him feel sure that they were at least worthy of trial. He would positively dissent from the statement that it was possible with his brilliant lamp to fail to obtain a shadow indicating pus in the antrum. The turbinotomes were entered into the nostril while closed, and were then expanded.

DR. F. C. COBB, of Boston, said he did not think it was the pus that produced the shadow in an antral empyema, for he had found the shadow quite as dark after washing out the antrum as before. The shadow was produced by the thickening of the mucous membrane resulting from œdema and the polypoid degeneration of the membrane.

Foreign Body in Nose, for Thirty Years.—DR. W. L. BAL-LENGER, of Chicago, presented a specimen removed from the nose. At the time it was supposed to be a rhinolith. The case was one of foul-smelling suppuration of the nose. According to the history, thirty years ago the patient's eye was destroyed by the explosion of a gun. On cutting open the mass removed from the nose it was found that the core of the foreign body was the breech-pin of a musket.

A Case of Lipoma of the Tonsil.—DR. CLEMENT F. THEISEN, of Albany, reported this case. The patient was a girl of eight years, seen in December, 1902. She had suffered several years from a severe paroxysmal cough. Examination showed a smooth-surfaced yellow tumor about the size of a marble, which was attached to the center of the right tonsil by a long, thin pedicle. Dr. George W. Blumer reported that the tumor was a lipoma. The speaker said that he had been able to find only six other cases of true lipoma of the tonsil on record. They were the rarest of the benign tumors of this part. It was rather remarkable that the majority of the cases had been found in adults, one being in a person ninety years old. As a clinical feature the yellow color of the fatty tumor was important, though not pathognomonic. Practically the only way that a positive diagnosis could be made was by histological examination. Removal of the growth by the hot or cold snare, or by the scissors was the only treatment.

Retropharyngeal Abscess. Report of Three Cases.—DR. L. C. CLINE, of Indianapolis, presented this paper. He said that from the fact that these abscesses were associated with, or followed naso-faucial inflammation it was reasonable to suppose that these abscesses were dependent upon infection in that way. The first case reported was that of a child of five and a half years, seen in consultation. She was greatly emaciated, had a temperature of 101° F. and suffered from attacks of dyspnœa. The neck was greatly distended, especially on the right side, and there was a peculiar croaking cough. An incision was made and pus evacuated. She did well for five days, when she suddenly had a choking attack, and was so near death that the attending physician did an emergency tracheotomy. Subsequently better drainage was established, and the child made a good recovery. The second case was that of a man with a troublesome spasmodic cough. There

was a large swelling involving the whole of the posterior pharyngeal wall. A long and deep incision was made in the median line, from below upward, but there was only a scanty discharge of pus and connective tissue. The patient was relieved but continued in poor condition because of the general sepsis, and died in a choking fit two weeks later. The case was apparently of tuberculous origin. The third case was that of a child of two years and a half, seen in March, 1903. After recovering from measles the child developed a croupy condition and for a few days before being seen by him had had a peculiar severe paroxysmal cough. There was a large swelling on the posterior wall of the pharynx, and this was freely incised and a large quantity of pus evacuated. Recovery was rapid.

DR. F. C. COBB said that he had seen a good many of these abscesses at the Massachusetts General Hospital. It was always well to examine the cervical vertebræ. In young children it was his practice to make a broad incision and take pains to keep this incision open. Apparently the opening had partially closed in one of the cases reported in the paper. There seemed to be very little risk of suffocating the patient by the escape of pus.

DR. S. MAKUEN SMITH, of Philadelphia, would like to know what provision Dr. Coakley made to prevent injury to the vessels of the neck.

DR. C. G. COAKLEY commented upon the fact that these cases occurred for the most part in private practice. In the public clinic he frequently saw six or seven of these cases in the course of a winter. These abscesses seemed to originate in some infected lymphatic gland in this region, often as a result of local tuberculosis. A bacteriological examination was not of much importance because of the many micro-organisms found in the throat. He had seen but one case of retropharyngeal abscess in private practice, and that was in a man about thirty years of age. There was no enlargement of the tonsil or œdema of the pillars of the fauces. Incision gave speedy relief. Sometimes these abscesses were secondary to caries of the cervical vertebræ. It was his rule to employ the incision through the mouth, beginning far down in the median line and carrying the incision as far as the swelling extended. The patient's head was then lowered and the finger used to press

out the pus. Sometimes this opening closed, requiring a second, or perhaps a third, incision. Although he had operated several times upon patients almost moribund he had had no serious complication arising from the passage of the fluid down into the air passages.

DR. COAKLEY said that he found the old-fashioned hatchet-shaped gum lancet a useful instrument for opening these abscesses. The abscess usually stood out quite prominently, and the blood-vessels were displaced laterally so that there must be comparatively little danger of injuring them by the incision of the abscess.

DR. GEORGE L. RICHARDS, of Fall River, thought these cases were more common than appeared from the records, and that children often died from this condition without its being diagnosed. He recalled a case in which a child had been brought to his office almost asphyxiated. On passing in his finger he felt the abscess and instantly he opened it with his finger nail, giving the child relief. Although an emergency method, it was justifiable sometimes in general practice as a life-saving measure. He did not think there was much danger of hæmorrhage in operating upon these cases. In incising the abscess he made the incision both upward and downward, sometimes for fully two inches, to make sure that the whole extent of the abscess was laid open. With concentrated peroxide of hydrogen solution on a cotton pledget he then swabbed out the abscess cavity.

DR. W. H. DUDLEY, of Easton, Pa., said that the second case mentioned in the paper recalled one that had come to him with a history of paralysis of one of the ocular muscles. The patient had been on antisyphilitic treatment without benefit, and was in wretched condition at the time. Examination revealed a fluctuating tumor of the pharynx, and on incision of this complete and permanent relief was given.

DR. J. H. RAY, of Louisville, had not found these abscesses particularly rare, especially in nursing infants. Sometimes these abscesses were traumatic, and they were usually situated very low down. In one such case the breast bone of a quail had lodged in the œsophagus, and in the efforts to remove the bone the family physician produced considerable traumatism. Some days later the neck swelled, deglutition became almost impossible, and the patient had that peculiar croaking voice so

characteristic of retropharyngeal abscess. The mirror showed a swelling down near the larynx. This was incised and considerable pus evacuated. In another traumatic case a pin had lodged in the larynx of a boy two days before. The pin was deeply buried in the tissues, and was removed with difficulty. A week later the child returned with a circumscribed swelling low down on the posterior wall of the pharynx, associated with much infiltration of the larynx.

DR. CHEVALIER JACKSON said that in opening these abscesses he made use of a bistoury or scalpel the greater part of the blade of which was guarded by wrapping it with adhesive plaster.

DR. CLINE, in closing the discussion, said that the first case had lasted six weeks and general infection had already occurred, which probably explained the refilling of the abscess.

A Case of Tubercular Laryngeal Stenosis Treated by Tracheotomy.—DR. PRICE BROWN, of Toronto, reported this case. The patient was a man of thirty-one, who had been referred to him on April 2, 1901. He was suffering from night sweats and a frequent racking cough. Tubercle bacilli were not found in the sputum at the time. The left side of the epiglottis was decidedly infiltrated, and the whole larynx was bathed in mucopus. An alkaline spray was used daily followed by menthol and lanolin, and at intervals of a few days an application of a 50 per cent. solution of lactic acid was made. By May 12 the patient had improved considerably, both in the local and general condition. On May 13 there was a chill and a rise of temperature to 103° F. The lungs showed fairly advanced tuberculosis. The patient then began living out-doors in a tent. Eleven months later his condition had improved so much that he was admitted to a sanitarium for incipient tuberculosis, although he had been refused admission at the time of commencing the tent life. Nevertheless tubercle bacilli were found in the sputum. On November 10, 1902, the larynx became so œdematous that he felt justified in doing tracheotomy, and high tracheotomy was performed. From the time of the operation the laryngeal symptoms slowly improved. For many weeks now the temperature had remained normal and the patient had regained his full normal weight. No tubercle bacilli were found at present in the

sputum. The tube was still worn, and when the opening was closed with the finger the patient could speak in guttural tones. There were no visible ulcerations in the larynx. After another summer of tent life it was purposed to attempt the cure of the laryngeal stenosis by the use of graduated tubes.

DR. JOHN A. THOMPSON, of Cincinnati, thought tracheotomy was indicated in those comparatively rare cases of tubercular laryngitis in which there was extensive infiltration with comparatively little trouble in the lungs. He had seen such a case first about eleven years ago. In that instance the dyspnœa was extreme, and was due to the fixation of the cords by extensive infiltration. Under local treatment this infiltration was absorbed, and instead of dying within a month as had been expected, she was still alive and hearty. The other side of the picture was the danger of infection of the other tissues of the neck by tuberculosis. This was exemplified by another case in which low tracheotomy was done and a laryngo fissure established. The latter healed readily but the tracheotomy wound became infected by the sputum, and the tissues of the neck broke down very rapidly. The unknown element of vital resistance must always be an uncertain factor in determining whether or not tracheotomy was desirable.

DR. C. F. THIESEN spoke of a case of laryngeal tuberculosis which had been complicated by a severe attack of grippe. This was followed by such severe dyspnœa that immediate tracheotomy was demanded. The trachea was not found in the usual position, but considerably to the left of the median line. On opening it several ounces of pus escaped from an abscess connected with the trachea low down. The man eventually died some weeks later of a septic pneumonia.

DR. PRICE BROWN closed the discussion. He said that the last speaker's remarks reminded him of a case of abscess of the larynx that he had seen at one time, and in which death occurred during the night. It was undoubtedly important to carefully select the cases.

The Pathology of Ethmoiditis Reconsidered.—DR. EDWARD WOAKES, of London, England, sent a communication on this subject, which was ordered read. The author stated that there was certainly a specific character to this disease. In the first stage morbid changes were found only in the mucous

membrane. Sometimes some myxœdematous tissue would be in evidence. The glands embedded in the newly formed fibrous tissue were not only compressed but were often absorbed and assimilated. In the second stage the small arteries of the submucous stratum were invaded and coincidentally myxoma developed from within, and the bone itself became thinner by absorption. Later on sharp spicules of earthy matter projected from the surface, and by this time or perhaps long before the fibrosis itself tended to atrophy. The author then raised the question as to whether fibrosis was due to the pre-existence of a constitutional diathesis, and expressed the opinion that the answer would probably be found by future research in the field of the rhinologist.

The Import of the Salivary and Nasal Secretions in Hay-Fever.—DR. D. BRADLEY KYLE, of Philadelphia, was the author of this paper. He said that he had first become interested in this subject eight years ago. There could be no doubt that with the variations of reaction from alkaline to acid, and *vice versa*, the secretion must undergo decided changes in its chemical composition. It was a well known physiological and therapeutic fact that certain drugs exerted a selective action upon certain parts of the body. He had become convinced that by studying the saliva one could determine important changes in the chemical processes going on in the body. Hyperacidity was said to favor chemical change in the tissue with an increase in the proportion of organic acids. The chemical action of the saliva depended upon its ferments, the most important of which was ptyalin. A great many morbid processes had been traced to uric acid, but he believed that many equally important substitutes were deposited and eliminated. In this way might be explained many of the reflex neuroses, as for instance, hay-fever. After a series of examinations of the saliva of certain individuals afflicted with hay-fever, and of those not so afflicted, he had become convinced that the irritation often arose from a chemical change in the saliva. There was apparently a field for investigation in this direction. He had known a teaspoonful of common table salt, swallowed at one dose, to cut short more than one attack of hay-fever, thus showing the relation between the chemistry of the secretions and such irritative conditions. Hay-fever rarely if ever manifested itself in atrophic rhinitis, a condition which involved

the mucus secretions. Certain attacks of so-called hay-fever often came on suddenly without apparent exposure to cold or other common source of irritation. In such cases he believed that, owing to some alteration in the chemical composition of the saliva, substances were formed which, on exposure to the air, became decomposed and gave rise to irritants. Such an attack was comparable to the condition resulting in some individuals from the inhalation of ammonia. Normally, the sulpho-cyanides and ammonia salts in the saliva were present in about equal proportions, whereas in many of these cases these compounds had been found to be in excess. In cases of hyperacidity the sulpho-cyanides were in greater proportion than the ammonia salts, and the secretion was less irritating; in cases of diminished acidity the reverse was true.

DR. NORVAL H. PIERCE, of Chicago, said that there seemed to be a law governing infections, which was operative in all cases. A change took place in the body prior to infection with the micro-organism. In Pasteur's well-known experiments with chickens certain micro-organisms of a certain virulence were introduced into the throats of chickens and the latter were kept at a certain temperature. Almost without exception when the temperature sank below a certain point and remained so for some time, active inflammatory changes supervened. Pasteur explained these phenomena by saying that the cold produced in the cells of the chickens a change which permitted the micro-organisms to become active. We were all frequently exposed to infection by various micro-organisms and yet it was only exceptionally that we did actually become infected. Too little attention had been paid heretofore to the chemical changes occurring in the secretions. In the common rhinitis in which the body was subjected to a chill, the chemistry of the secretions was altered, and, as a result, certain substances were formed which were irritants to the mucous membrane. He believed the time would come when one would be enabled to demonstrate that heat and light themselves might produce such changes as were represented by the condition known as hyperæsthetic rhinorrhea. He had a patient under observation who would escape from an attack of hay-fever at a certain time of year so long as he wore dark glasses, but on removing them the attack would occur, and would continue for some time, even though the glasses were replaced. When an ear drum was perforated the original infections played a secondary part as

compared with the germs of putrefaction which were introduced through the external auditory canal. The secretions which were the result of the inflammation were decomposed by those putrefactive organisms, which cast off a chemical irritant. The latter in turn reacted on the mucous membrane, and so a vicious circle was established. He recalled a case of a gentleman who had accidentally discovered that if he took two drams of phosphate of soda after an excess in eating or drinking this would entirely prevent an annoying pharyngitis which would otherwise supervene. In another case the taking of bicarbonate of soda into the stomach would bring a rhinitis to a close.

DR. H. HOLBROOK CURTIS, of New York, said that the theory presented in the paper only seemed to explain a certain class of cases. He had collected about 8000 replies to his circular regarding hay-fever, and while he had not tabulated and classified these, he was disposed to believe that hay-fever would be subdivided into three classes, viz.: (1) A systematic condition, which might give rise to the winter variety of hay-fever, *e. g.*, explosions of uric acid in the blood or the chemical changes described in Dr. Kyle's paper; (2) a local condition in which the application of certain pollens or effluvia precipitated an attack of hay-fever, and (3) a neurotic condition. It had been proved that a person who had hay-fever, so-called, did not have it if a horse had been thoroughly smeared with vaseline. It had also been proved that the irritant was an emanation from the body of the horse, either dandruff or perspiration. The elephant-house of the menagerie was the cause of an acute hay-fever in some individuals, while some experienced an attack from the inhalation of any dust. In one case of this kind he had effected a complete cure by removing a posterior hypertrophy of the turbinal.

DR. C. F. THIESEN referred to the very recent investigations of Dr. Dunbar of Hamburg. Dr. Kyle's theory no doubt accounted for many cases of hay-fever, but he did not see how it would explain the experiments of Dr. Dunbar. This investigator's laboratory experiments in this field had extended over a number of years, and he had found that from various grains, particularly maize, were obtained a pollen poison, which when introduced into the nostrils of hay-fever patients would result in a typical attack of hay-fever, even in winter. Again, by

inoculating animals he had obtained an antitoxin which would absolutely neutralize his pollen toxin. Further than this, the pollen toxin was introduced into the nose of a number of persons who had never had hay-fever, and the result was negative. We should distinguish between typical hay-fever and that designated by the Germans as rhinitis nervosa.

DR. COAKLEY said he had been deeply interested in the paper. Many of the statements made therein tended to confirm the results obtained by Dunbar. This gentleman found that in the interior of the small granules of pollen was a starchy body which was soluble in salt solution and blood serum, and when this was injected it gave rise to hay-fever. However, on reading Dr. Dunbar's paper he had been disappointed with the therapeutic results thus far obtained. In atrophic rhinitis the condition was such that there was very little secretion, and hence, very little opportunity for the pollen to be dissolved, consequently there was not much opportunity for absorption.

DR. PRICE BROWN said that he knew a gentleman who had suffered for years from hay-fever, and had not been benefited much by any treatment. The speaker had advised him last summer to go to the country and work vigorously during the whole of the hay-fever season. He lost his appetite, but suffered from thirst. The thirst he quenched by drinking lemons. He wholly escaped hay-fever that time, and this, Dr. Brown thought would be explained on the theory of chemical changes in the secretions.

DR. S. MAKUEN SMITH said that it had been a tradition in his locality that hay-fever could be relieved by taking a teaspoonful of table salt in one or two pints of hot water on retiring. This would not cure all cases of hay-fever, but it would certainly abort many of them.

DR. J. A. STUCKY said that he had previously pointed out in a paper on lithæmic nasopharyngitis that these neuroses were often due to intestinal intoxication, and that as a result of a series of urinary examinations he had found that there was an excess of indican in these cases. Continuing this investigation he had since found an excess of indican present in eleven out of seventeen cases. Another matter of interest was that it was exceedingly rare indeed to find hay-fever in the laboring classes. In an experience of twenty-two years he had seen it

only once, and that in a negro cook, who was cured of his hay-fever by sending him out to work on a farm.

DR. KYLE, in closing the discussion, said that he had not stated that all the cases of hay-fever were dependent upon change in the secretions. The case of hay-fever brought on by leaving off the glasses was evidently one in which there was some refractive error or the glasses would not have been worn, and again, if lachrymation resulted from leaving off the glasses it was easy to understand how nasal irritation might result. He knew of a whole family who were exceedingly sensitive to the fumes of ammonia, and who could not on that account go near a horse without getting an attack of hay-fever. These persons suffered from the inhalation of aromatic spirits of ammonia.

A Case of Bilateral Abscess of the Septum with Well Marked Symptoms of Septicæmia.—DR. W. L. CULBERT, of New York, reported this case. The patient was a man of thirty-one, a cigarette smoker, and a moderate drinker. Five days previous to coming under observation he had contracted a severe "cold." His temperature was 104° F. and his pulse 132, and the skin was clammy. There was intense throbbing pain; the nose was completely occluded; the mucous membrane was loose and there was a boggy and fluctuating tumor. Both abscesses were opened by a vertical and horizontal incision, and the relief was immediate. The cavities were irrigated first with peroxide of hydrogen and then with weak carbolic acid solution, and were then lightly packed. By the next day all of the septic symptoms had disappeared. Five days later the septum appeared normal. The patient brought with him a quadrangular piece of necrosed bone that had been discharged from the nose. The occurrence of septicæmia in such a case was not usual, and the etiology of these abscesses was somewhat obscure. The fact that the abscess was bilateral and involved both the cartilaginous and bony septum was also of interest.

A Case of Epiglottic Abscess with Secondary Involvement of the Cervical Glands.—DR. CULBERT also reported this case. The patient was a merchant, thirty-four years of age, who had consulted him last summer because of painful and difficult deglutition and a sense of swelling in the throat. He was undoubtedly gouty, and had suffered previously from several at-

tacks of quinsy. The anterior chain of lymphatic glands of the neck was swollen and tender. His temperature was 100.5° F. and his pulse 90. The mirror showed a mass at the base of the anterior surface of the epiglottis a little to the left of the median line. There was no tumor or involvement of the larynx. The abscess was opened by the use of a sharp, curved aneurism needle. Relief was immediate and the enlargement of the lymphatic glands disappeared within a few days. The extensive involvement of these glands was a point of some interest.

DR. GEORGE L. RICHARDS said that last winter he had first seen a case of abscess of the septum associated with septicæmia. The patient was a physician whose nose had been injured by the break-down of his carriage. An abscess of the septum developed in three or four days, and it was incised by another physician. The man then developed a temperature of 103° F. and simultaneously a pain in one knee. The condition grew worse in spite of washing out the wound. Finally, Dr. Maurice H. Richardson operated, opening up several small abscesses. It was several months before the patient was able to resume his work. Some of those cases of septal abscess led to considerable deformity of the bridge of the nose.

DR. C. G. COAKLEY said that the tendency of the cartilage to break down was very great, and took place quite rapidly. He thought it possible that the piece of bone discharged in Dr. Culbert's case was a part of the anterior portion of the ethmoid. He had advocated the use of the Simpson tampon to hold the parts in proper position and so prevent deformity.

DR. W. L. BALLENGER, of Chicago, said that the significant fact about the case of septal abscess under discussion was the amount of septicæmia, which seemed to indicate that there had been an extension of the infection beyond the septal part of the cartilage to a part more richly supplied with lymphatics. In his own published case there was bilateral abscess, but there were no marked symptoms of sepsis.

DR. CULBERT closed the discussion. He said that he had been unable to see the patient recently to determine whether or not there was much ultimate deformity. He had incised both sides of the septum largely with the idea of avoiding deformity.

The Relations of the Upper Air Passages to Diseases of the Gastro-Intestinal Tract.—DR. L. A. COFFIN, of New York, read this paper. He said that he had been struck by the large number of his clinic patients who complained only of post-nasal catarrh. The disease *per se* was a local one. The stoppage of the nose at night on the side next the pillow was a common complaint, and was due to hypertrophy of the posterior ends of the inferior turbinal. The pathology was that of a cirrhotic membrane. The commonest basic principle in the etiology was irritation, and this resulted in hyperæmia. The circumscribed area affected was against the view that the condition was the result of general toxæmia. As the anterior nares frequently escaped the disease altogether it was evident that one must look elsewhere than to the inspired air. Children, who seldom had great structural deformity of the nose, were quite as frequently affected with post-nasal catarrh as were adults. The author believed the chief cause of the pathological condition under discussion was the irritation resulting from the eructations of gases from the stomach. He believed that in considering chronic follicular pharyngitis and nasopharyngitis as frequently secondary to chronic indigestion, one took a logical position, and that better results would follow from treatment founded upon this assumption. Hyperacidity was a most common cause and the reason it was overlooked was that the great majority of these persons gave no symptoms pointing to gastric disorder. A series of cases had been examined by modern methods for stomach disorder, and the results noted and compared with the examinations made of the upper air passages.

DR. JOSEPH A. WHITE, of Richmond, said that while he had been deeply interested in the paper he did not feel fully convinced by the author's statements and reasoning. When a medical student he had been taught that all troubles of the nose, pharynx, larynx, and tonsils were invariably dependent upon disorders of the digestive apparatus, and especially of the liver. The digestive apparatus was subsequently relieved of some of this onus by the theory that rheumatism was the basis of many of these affections of the upper air passages, and then, in turn, disorders in women, and smoking and drinking in men were also held to be etiological factors. Mere refrigeration was, as a rule, nothing more than a defective circulation of the skin, although perhaps dependent upon digestive dis-

order. The same was true of many of these other affections, because they were dependent upon circulatory disturbances of the same general nature. The old teaching was to give a calomel or saline purge, followed by the local or internal use of chlorate of potash and many physicians still maintain that this is good therapeutics to-day.

DR. W. L. BALLENGER said that so far there did not seem to be any exact evidence as to the relationship between the upper air passages and the disorders of the digestive tract, most of the literature on this topic presenting assertions rather than arguments. The nasopharynx was a region richly supplied with lymphoid tissue, and the region was, embryologically speaking, quite complex. Such tissue was of comparatively low vitality, and hence more liable to inflammatory disturbances. This was probably one biological factor in the consideration of nasopharyngeal catarrh. The lymphoid tissue of children was specially prone to inflammation on slight irritation, and hence it did not follow that the frequency of post-nasal catarrh in children was due to eructation of gases from the stomach and the regurgitation of irritating fluids.

DR. F. C. COBB asked if these cases had been followed, and whether the catarrh had improved as the condition of the stomach had improved.

DR. S. MACKUEN SMITH said that the paper was very important and emphasized the statement made in the President's address concerning the necessity of a physician having a good knowledge of general medicine before taking up a specialty. So-called "bilious spells" were often associated with coryza and hoarseness and more or less pain, and the patient at the same time became weak from intestinal intoxication dependent upon absence of the bile. These cases would improve wonderfully if one gave 1/10 of a grain of calomel every half hour for about ten doses, and followed this the next morning by a saline. After this he was accustomed to give half a grain to one grain of mercury and chalk every night for some weeks; it could be kept up even for months without any accumulative effect from the mercury. Many cases of dry throat would improve wonderfully from giving hydrochloric acid twenty minutes after a meal instead of immediately after the meal. In persons suffering from frequently repeated attacks of coryza the underlying condition was often an intestinal intoxication.

High injections into the colon of lukewarm normal salt solution often proved beneficial.

DR. J. A. THOMPSON said that he had seen cases of marked laryngitis which had proved absolutely rebellious to treatment until hyperacidity of the stomach had been diagnosed and properly treated. Clinical experience was the court of last resort in medicine, and we should, therefore, give such experience its full weight. The regurgitation of irritating secretions during sleep was often responsible for pharyngitis and rhinitis. A little over one year ago a patient had come to him with a superficial ulceration on the tonsil which did not resemble either syphilis or tuberculosis. The case was on his hands for months; at one time healing and at another breaking down. The conclusion was finally reached that the recurrence of the ulceration was due to the stomach, and a chemical examination showed complete absence of hydrochloric acid in the gastric juice. When this acid was prescribed internally the ulceration was speedily and permanently healed. He believed that if in obstinate cases of local inflammation the stomach were more carefully interrogated the key to the trouble would be discovered.

DR. LEWIS C. CLINE felt that if this line of investigation were pursued more generally there would be much less of the saw and cautery. The time had come when careful study of the secretions and better general treatment were demanded.

DR. PRICE BROWN thought that a great deal of this nasopharyngeal trouble was respiratory in origin. If one made sure that the nasopharynx was free from hypertrophied tissue little else would be demanded except some attention to the general health. The reader of the paper had spoken of otitis media as frequently resulting from the vomiting of children. While this might be so in many cases, in many others it was due to the presence of adenoid tissue.

DR. L. A. McCLELLAND, of Brooklyn, said that he had often noticed that cases of acute and chronic pharyngitis would improve very rapidly under large doses of calomel and jalap followed by salines, and that under this treatment very little local treatment of the naso-pharynx was called for.

DR. DUNBAR ROY, of Atlanta, said that it was in the nasopharynx particularly that he understood the author of the paper

maintained that digestive disorders exerted their influence. Undoubtedly nasopharyngeal catarrh was often the result of stomach disorder, but he had met with cases of nasopharyngeal bursitis again and again as a distinct entity. The nasopharyngeal catarrh having this foundation could be relieved in most instances, but nothing more could be accomplished. Persons who were chronic drinkers were well known to suffer from chronic nasopharyngitis as well as catarrhal condition of the stomach. In such cases no other treatment was required but a withdrawal of the stimulant.

DR. C. G. COAKLEY said that if Dr. Coffin had done nothing more than called attention to the fact that some other part of the body required treatment besides the upper air passages, he would have given the members of the society a good deal to think about. It had occurred to him that many of the affections of the nasopharynx associated with digestive disorder were not necessarily produced by the gaseous eructations or by the regurgitation of irritating fluids. In his opinion, altered secretions were more directly responsible for the conditions under discussion.

DR. WENDELL C. PHILLIPS, of New York, said he quite agreed with the last remark of Dr. Coakley regarding the effect of eructations, either in infancy or in later life. It was now well known that suppuration of the middle ear was always due to the introduction of septic material into the Eustachian tube; hence the case reported in the paper did not prove that eructations were responsible for the otitis. He would recommend that calomel and a saline should be administered coincidentally, that is, give half a dram of bicarbonate of soda every half hour or hour for several hours, and at the same time give the calomel in doses larger than $1/10$ of a grain. At the present time he gave half a grain of calomel every hour until two or three grains had been administered, and at the same time gave large doses of the bicarbonate of soda.

DR. J. A. WHITE said that while he thoroughly appreciated the paper, it unfortunately dealt with a subject which could not be presented with scientific exactitude. He would like to know why the author excluded the consideration of the possible bad effect upon the stomach of the swallowing of the irritating secretions from the naso-pharynx, when he was at the same time contending that the irritation from the stomach

caused so much mischief in the naso-pharynx. Personally he was disposed to think that gastro-intestinal trouble arose from the condition of the upper air passages, and not that the reverse was true.

DR. C. F. THIESEN emphasized the need for great general knowledge among specialists, quoting Virchow's comparison of the specialties to the offshoots of a tree, the trunk being general medicine.

DR. COFFIN closed the discussion. He said that he had endeavored to eliminate toxæmia from the paper, and hence, the throat which was benefited by the administration of calomel was not the kind of throat that he was trying to describe. The subject though old did not seem to him to have attracted the attention that it merited. In reply to Dr. Cobb's very pertinent question as to the ultimate results, he would say that the cases sent to the stomach specialist had been selected because there was a practically normal structural condition of the nose and throat. He was particularly interested in the remarks made by Dr. Thompson concerning the cases of diminished acidity, for, he had not been able to gather sufficient evidence about these cases.

SECOND DAY.—Friday, May 1.

Symposium.—Otitis Media Suppurativa.—DR. NORVAL H. PIERCE, of Chicago, opened this symposium with a paper on the Etiology and Pathology. He said that whether the type were catarrhal or suppurative pathogenic micro-organisms played an important part. The micro-organisms most commonly met with were the streptococcus, the staphylococcus and the diplococcus pneumoniae. Pure infection was the exception rather than the rule; the staphylococcus pyogenes was the organism most often found in pure culture. It was said that infection might reach the ear through the *fissura petrosa squamosa*. The same organism under different circumstances might give rise to different types of inflammation depending upon the virulence of the organism and their number, the resistance of the tissues and the rapidity of invasion. In considering the pathology one should remember that the mucous membrane of the ear served the double purpose of mucous membrane and periosteum, that the glandular element was scanty as compared with mucous membrane elsewhere in

the body, and that the mucus was largely liberated by the pavement epithelium. This explained the tendency of inflammation of this part to result in necrosis, there being a rapid multiplication of white cells, thus impairing the nutrition of the bone derived from the muco-periosteum.

Etiology, Symptomatology, and Pathology of Otitis Media Suppurativa Chronica.—DR. CHARLES W. RICHARDSON, of Washington, D. C., presented this paper. He said that the most frequent causes of the chronic variety were: (1) Improper treatment of the first stage; (2) certain types of constitutional invasion, such as scrofula, tuberculosis, syphilis, anæmia and marasmus; (3) the occurrence of an acute suppurative otitis in the invasion of certain acute infectious diseases; (4) differences in the virulence of the bacilli present; (5) local changes excited at the time of invasion or during the progress of the case, *e. g.*, the development of granulation tissue, caries of the ossicles or tympanic wall and retention of the discharge, and (7) local changes in nasal and nasopharyngeal cavities. Caries, with necrosis of the ossicles, was the most common bone lesion in this disease. The stapes was rarely affected. The carious process might extend to the walls of the tympanic cavity, especially that portion formed by the auditory plate of the temporal bone. The membrane was almost always destroyed to a greater or less extent. The mucous membrane of the Eustachian tube, like that of the tympanic cavity, became infiltrated. The changes in the mastoid during chronic suppuration were: (1) Congestion, swelling and polypoid degeneration of the lining of the antrum and mastoid cells; (2) complete obliteration of the mastoid cells; (3) osteosclerosis of the mastoid; (4) accumulation of mucopurulent or purulent secretion in the antrum and mastoid cells, and (5) the formation of cholesteoma. The most characteristic symptom of chronic suppuration of the middle ear was the presence of a discharge. Pain was infrequent in this variety, though it might result from interference with free escape of pus. There was often a feeling of pressure or headache. Subjective noises were occasionally present, but were seldom continuous. Patients frequently heard fairly well so long as there was a free discharge, and they frequently became quite deaf when the discharge became scanty or ceased altogether. One perforation of the drum membrane was the rule, although occasionally multiple perforations were seen. The

membrane might be dull white or yellowish-red. The border of the perforation was usually more highly colored than the rest of the membrane. The periphery of the perforation might be adherent at one or more points to the tympanic wall. Granulations or polypi sometimes developed upon the tympanic wall. When the discharge was so limited as to form hard blackish crusts due care should be exercised in the removal of the crusts as their base might bleed and obscure the view.

The Inefficiency of the Wilde's Incision.—Dr J. M. RAY, of Louisville, read this paper. Citations were made from various authors to show the revulsion against the use of the Wilde's incision because of its inefficiency in the great majority of cases, and this fact was emphasized because, as the author said, many of these cases were operated upon by general practitioners or general surgeons who were not aware of the change of opinion that had taken place among otologists regarding this procedure. Any operation which did not open up a communication with the middle ear and give free exit to the pus was an unsurgical procedure. The prolonged use of hot applications often resulted in an external otitis or masked the symptoms and led to an operation in cases in which no surgical interference was necessary. The large majority of cases of acute suppuration in children were treated by the so-called internal Wilde's incision, but the fact could not be too strongly emphasized that the antrum was involved in almost every case of acute suppuration of the middle ear. The opening up of the one cell communicating with the tympanic cavity was absolutely necessary.

Treatment of the Complications of Otitis Media Suppurativa.—Dr. JAMES F. MCKERNON, of New York, read this paper. He said that in aural surgery, as in other departments of surgery, success depended very largely upon the employment of asepsis. A careful examination of the nose and naso-pharynx should be made and any obstructions present removed. For the lesions found in the drum membrane the cardinal principle was to maintain cleanliness of the parts and apply an astringent solution, such as nitrate of silver solution in varying strength, following this by insufflation of powders. Still later catheterization and vaporization of the Eustachian tube were useful in adults, whereas in children the Politzer bag should be used. It was found very useful to temporarily close the opening in the drum by means of collodion or a bit of thin paper held in

place by vaseline. Thickened and œdomatous mucous membrane could be reduced by the use of warm saline solution or the application of astringents. If the mastoid were diseased the radical Schwartze-Stacke operation should be done. It was rarely necessary to remove the stapes, and care should be taken not to disturb its relations to the oval window. The incus was the ossicle which was usually first attacked because of its limited blood supply. After the removal of the ossicles the tympanic walls and vault should be carefully curetted so as to remove all diseased tissue, particularly in and around the orifice of the Eustachian tube. This having been done the cavity should be wiped dry and packed with a wick of iodoform gauze. The latter should be removed after twenty-four hours, and then the parts manipulated thereafter as little as possible. Diffuse external otitis frequently occurred in the course of an inflammation of the middle ear. Free incision followed by curettage and drainage would give relief more quickly than palliative treatment. This condition was prone to occur in groups rather than singly, and repeated incisions were sometimes required. When there was tenderness over the mastoid an ice coil should be used for twenty-four hours, and the auditory canal should be irrigated with warm bichloride solution of a strength of 1 to 8000. If at the end of twenty-four hours there was no diminution in mastoid tenderness the ice coil should not be persisted in; but if the tenderness had diminished it was justifiable to continue the ice coil for twelve hours more. Sometimes the application of dry heat answered the same purpose, but neither cold nor heat should be applied to the mastoid if the case were of several days' standing, or if œdema were already present. If it became necessary to do the radical mastoid operation it should be remembered that a softening of the bone at the root of the zygoma often demanded attention. If any areas of the dura were exposed they should be separated by packing to guard against the possibility of subsequent infection. To make the primary dressing comfortable to the patient and easy of removal a piece of sterile rubber tissue, button-holed in places, should be first introduced, and then the gauze dressing over this rubber tissue. Ordinarily the first dressing should not be removed for five or six days.

Subperiosteal Abscess.—This was often met with in neglected cases in children, and occasionally also in adults. Not

only should the abscess be evacuated but the mastoid process should be opened up.

Adenitis.—Adenitis occurred very frequently following suppuration of the middle ear. It was often relieved by hot applications or the use of some such ointment as the ammoniated mercury. If the glands appeared to be breaking down they should be removed under anæsthesia.

Pachymeningitis.—Pachymeningitis was the most common among the intracranial affections arising in chronic middle ear suppuration, and usually accompanied mastoiditis, sinus thrombosis or brain abscess.

Epidural Abscess.—In cases of epidural abscess, a piece of gauze should be placed over the dura at operation, and removed on the third or fourth day.

Sinus Thrombosis.—The lateral or sigmoid sinus was most frequently affected in connection with pachymeningitis around the sinus. Each individual case was a law unto itself. There must be complete and thorough exposure of the sinus, followed by flushing of the field with alcohol before opening the vessel. The part usually opened was that above the bend, the anterior wall being incised with the scalpel. The use of the aspirating needle had been discarded because it often gave a wrong impression of the condition existing within. If a large clot were present, it should be removed with the curette and the hæmorrhage allowed to continue for a few seconds to remove septic material. The hæmorrhage was then controlled by a packing of gauze. In about one-half of the uncomplicated cases the circulation could be restored at the bulb. If much time were consumed in efforts to restore the circulation it was better to desist. If the sinus did not contain pus, and there was no evidence of jugular involvement, the operative field should be cleansed and the sinus packed at the bulb without making further efforts to restore the circulation. The lower end of the sinus at the bulb should be exposed.

Thrombosis of Internal Jugular Vein.—If, on opening the sinus, there was a disintegrating clot, the vein should be resected, and the same should be done if other veins were found to be similarly affected. The pneumogastric nerve should be carefully separated from the vessel. The wound in the neck

should be sutured to within a small distance of the bulb and a wick drain inserted for the first forty-eight hours. It should be remembered that time was necessary to overcome the general infection, even though the source of this infection had been eradicated. The inferior petrosal sinus was frequently thrombosed in connection with the bulbous portion of the sigmoid sinus. A thrombosis of the cavernous sinus was almost invariably fatal.

Brain Abscess.—About thirty-seven per cent. of all cases of brain abscess were otitic in origin. The most common site for subdural accumulation of pus was the inferior and posterior portion of the temperosphenoidal lobe. The roof of the mastoid antrum and the floor of the middle fossa were removed. A sufficient exposure of the dura was essential, and all bleeding points should be controlled. When there was a collection of pus just below the dura the latter should be incised sufficiently for exploration, care being taken not to cut any large dural vessel. A silk suture should be passed through each flap for the purposes of retraction. An aspirating needle of large size could be used for exploration of the brain. When pus was found, a sufficiently large opening was made to admit of the removal of the pus. The cavity could be cleansed by gentle irrigation with warm saline solution or by gentle mopping with gauze. The less the manipulation and the more rapid the operation the better the chances of success. Drainage could be secured by tubes or gauze wicks. The latter he preferred, using a wick covered over with equal parts of a powder of boric acid and iodoform. When it was desired to explore the temperosphenoidal region first the bone should be removed at a point one inch and a half above, and the same distance behind, the bony meatus. In all of the cases in which the pus was not definitely localized before operation it was best to make use of the flap operation devised by Dr. E. B. Dench. The skull should be entered rapidly by the trephine or chisel, a free opening being secured. The utmost care should be exercised in searching for multiple abscess cavities. The principal point to bear in mind was that the skull should be entered at a point as nearly as possible to the floor of the lobe to be explored in order to secure free drainage. Another point was to limit the injury of the dura as closely as possible. The cerebellar lobe could be opened in the same manner as described for other regions of the brain; ordinarily the opening should be made

at a point one inch and a half behind the bony meatus and one-third of an inch below this level.

Meningitis.—When meningitis was present, and it could not be localized, little could be gained by a surgical procedure. An ice cap should be applied and large doses of iodide of potassium given internally. A meningeal complication was almost always fatal. Leptomeningitis was almost invariably fatal, yet it would seem rational, when recognized early, to explore and drain the region. Metastatic abscesses in different parts of the body should be treated according to general surgical principles. Metastases of the intestinal tract should be treated by the internal administration of large doses of bichloride of mercury. He had seen this treatment successfully employed in several cases.

Facial Paralysis.—Facial paralysis following middle ear supuration was not uncommon. The pressure should be removed by incision and warm irrigations, the patient being kept completely at rest, on a fluid diet and subjected to purgation. The use of the interrupted galvanic current would hasten the restoration of function of the nerve. When paralysis occurred several days after an operation for the removal of dead bone, it could be explained either by concussion at the time of operation and inflammation arising later, or by destruction of the facial branch of the chorda tympani. When the paralysis occurred immediately after an operation on the middle ear the presumption was that the nerve had been severed, and one should not expect such rapid restoration of function. Of course, if the divided nerve could be found, it should be repaired by suture.

Labyrinthine Affections.—The surgical part of the treatment of labyrinthine affections should consist in the removal of all pressure. The local treatment consisted in placing the patient in bed and administering pilocarpine hypodermically in full doses for a period of six weeks or more. If the patient could not be kept in bed the drug should be given by mouth. Potassium bromide should be given in full doses for the relief of the very annoying subjective signs. The upper respiratory tract should receive attention if needed. If both sides were affected, very little benefit would follow any method of treatment. He had met with little if any success from the vibratory treatment in such cases.

Cholesteomata.—The treatment of cholesteomata consisted in the entire removal of the mass. The safest method was to do a typical Stacke operation, which allowed the complete removal of the disease.

The Technique of the Radical Operation for Otitis Media Suppurativa Chronica.—DR. EDWARD B. DENCH, of New York, was the author of this paper. He said that it was imperative to shave the head for three inches around the ear. Women objected strongly to this, but it should be done nevertheless. The field of operation should be sterilized in the ordinary way and an antiseptic dressing applied until the time of operation. The initial incision began one-quarter of an inch behind the insertion of the lobule and ran upward and backward in a curved line, and was then carried upward and backward behind the line of auricular attachment to a point just above the apex of the auricle. It was then carried forward and downward. The incision must extend well forward in a horizontal direction in order to make a complete exposure of the upper portion of the bony canal and thoroughly remove the outer wall of the tympanic vault. The anterior flap should be pushed forward so as to expose the posterior and inferior margins of the bony meatus. With a narrow blunt dissector the fibro-cartilaginous canal was then carefully dissected out. Ordinarily the fibrous meatus could be preserved for one-eighth or one-third of an inch. The surgeon should then enter the mastoid antrum. When it lay deeply, and this was usually the case, the funnel-shaped opening should be enlarged by removing the cortex from below and even by invading the posterior portion of the bony canal. This allowed better inspection of the apex of the canal. It was incised to broaden the funnel above. When the probe entered the antrum and passed through the cell into the tympanic vault one could judge of the size of the antrum. The opening in the antrum should then be enlarged with the gouge so that the inner wall could be seen. The fibrous meatus should then be divided posteriorly close to the tympanic ring. A strip of sterile gauze should be inserted through the meatus and brought out through the incision in the posterior portion of the canal, and the two ends tied together and used as a retractor. This would pull the funnel-shaped external meatus and detach the auricle well forward. The next step was to break down the partition between the mastoid antrum and the external auditory meatus. This was best done

by chiseling upward. As the wound was deepened above, the portion of the external wall of the attic formed by the junction of the posterior and superior walls of the meatus, would come into view. This should then be removed with the gouge, exposing the aditus ad antrum. As soon as the prominence of the horizontal semi-circular canal came into view the operation should make one large cavity of the parts exposed. The posterior meatal wall must be cut down until it lay on a level with the tympanic cavity; then the niche of the round window could be easily seen. All diseased bone should be removed, but only such pneumatic spaces should be obliterated as were diseased. After the bony cavity had been thoroughly curetted, attention should be paid to the Eustachian tube. A small curette should be passed into its tympanic orifice, and any softened bone removed. The walls of the cavity should then be smoothed off with a burr, and then a firm packing of sterile gauze inserted. The posterior wall of the fibrocartilaginous meatus should be split so as to form two triangular flaps for covering the exposed parts above and below. The process of repair could be materially hastened by the application of Thiersch grafts taken from the patient's left thigh. These grafts should be one inch and a half by two inches and as thin as possible. A sponge should be held in such a way as to prevent any oozing of blood into the bony cavity during the application of the grafts. Sometimes it was necessary to make use of hot saline solution. The application of the graft should be made rather quickly in order to secure complete and deep adaptation of the graft to the bony wound; if done slowly the deeper part of the wound would fill up with blood. The grafts were held in place by judicious packing with pledges of cotton dusted with aristol. These pledges held the grafts firmly against the bony walls, and thus allowed the use of the needle to smooth out the curled up edges of the grafts. Experience had taught him that no harm was done if the edges of the graft happened to overlap each other, or even the cotton pledget. A strip of sterile gauze was applied over the pledges and brought out through the meatus. The posterior wound should then be closed by suture. The first dressing should be changed on the eighth day unless there were special indications for an earlier dressing. The whole cutaneous wound would usually be found united at this dressing. At this time the strip of gauze and one or two of the cotton pledges should be removed. A foul odor was often present due to the sloughing of the overlapping por-

tions of the grafts, but this did not indicate any failure of the operation. The pledgets were gradually removed at the subsequent dressings. At the time of the operation the number of pledgets introduced must be recorded with the history of the case. Out of 28 such operations, 16 of primary and 12 of secondary grafting, 26 had been cured, and 2 cases were still under treatment.

Some Unusual Mastoid Cases.—DR. H. BERT ELLIS, of Los Angeles, read this paper. The first case reported was one entering the hospital on September 14, 1902. At the time the patient was more or less irrational, talkative and semi-comatose. The mastoid antrum and cells were opened up and within a week the patient was rational, and she ultimately recovered with perfect hearing. The case was remarkable because of the degree of mental disturbance and the small amount of disease. The second case was that of a woman of forty-eight, seen last October. She came to him because of a right-sided facial paralysis which had suddenly developed one week previously. The mastoid antrum and cells were opened up but no pus found. A few days later acute suppuration of the other ear developed, but was checked very quickly. In sixteen days the patient returned home without any paralysis. The third case was a Chinese boy of seven months. The disease had been rapid in its onset although there was no history of previous middle ear disease. Extensive bony destruction was found. In the next case a girl of four years was operated upon under difficulties, a double mastoid operation being done in a greatly enfeebled child who became almost pulseless before leaving the table. Nevertheless recovery was satisfactory. The next case, one of paralysis, occurred in a woman of thirty. At the operation the cells and antrum were apparently healthy. They were converted into one cavity. The paralysis disappeared, but he was disposed to think there was no direct connection between the two. In the next case the external swelling was marked, and there was decided acute periostitis with necrosis, and yet no involvement of the antrum and cells.

Two Cases of Thrombosis of the Jugular Bulb; Ligation of Internal Jugular.—DR. NORVAL H. PIERCE, of Chicago, reported these cases. The first case was one of isolated primary thrombosis of the jugular bulb. The patient was a woman of thirty-seven years with a chronic discharge from the left

ear. On admission, on January 3, 1903, there was pain in the ear; the temperature was 101° F. and the pulse 112. The next day the temperature was 103° and the pulse 130. The discharge was profuse and the pain very severe, and there were infiltration and marked tenderness over the mastoid. A radical operation was done, and the mastoid cells were found necrotic and full of pus. Necrosis of the bone on a level with the floor of the middle ear was found extending inward toward the bulb. The patient's condition was such that no further operative interference was done at that time. Her condition grew worse, and on January 6 the sigmoid sinus was explored with negative result. The common jugular was tied on the following day, as grave septic symptoms continued. Afterwards there was marked amelioration of these symptoms, but they again reappeared with exophthalmos and œdema of both supra- and infra-orbital regions. Death occurred on January 14. The specimen was exhibited, and showed that the thrombus had extended up the inferior petrosal sinus to the circle of Ridley and thence to the ophthalmic veins.

The second case occurred in a man who had been operated upon a month previously for acute mastoid trouble without external evidence. The most prominent symptom was severe pain, especially over the occiput. He had had a chill the evening before, and on admission had a temperature of 103° F. On exploration, it was found that the antrum had been thoroughly opened up previously. On chiseling away the mastoid he suddenly came upon a perisinus abscess, but as there were no external evidences of sinus thrombosis the sinus was not opened at this time. The next day there were chill and a rise in temperature, and the sinus was then opened. It was exposed backward and then downward towards the bulb. The common jugular vein was tied. The temperature continued more or less elevated for the next three weeks, and during this time the pain persisted. The retinal changes which had been present before operation persisted, and when seen many months later one eye was still unchanged. He was confident that the thrombosis had extended up the inferior petrosal sinus, causing secondary thrombosis of the jugular bulb. In his opinion, it was not at all necessary to approach the jugular bulb itself through a bony passage.

DR. E. B. DENCH said that unless it could be demonstrated that there was a very free flow of blood through the sinus the

latter should be opened at the primary operation. In a recent case the sinus was covered with pus, and yet the sinus itself appeared to be normal and he was about to refrain from opening it; nevertheless he did open the sinus and found there was a thrombus. A delay of twenty-four hours represented the loss of very valuable time. He did not think the puncture of the sinus was of much value as a diagnostic aid. He had not seen a single case in which the incision of the sinus under aseptic precautions for exploratory purposes had been followed by an unfavorable result. Having opened the sinus and found nothing, he would pack the sinus with iodoform gauze and isolate the sinus with gauze. The sinus was destroyed, but this, he thought, was better than waiting twenty-four hours. He preferred the use of iodoform gauze to sterile gauze in cases in which the normal sinus was surrounded by suppuration. He had not observed any trouble from hæmorrhage after the first dressing.

DR. PIERCE said that all of the symptoms of pronounced septicæmia could be obtained from necrosis of the mastoid cells themselves, and that one could not tell from the course of the disease whether or not the sinus was involved. Even after having exposed the sinus for a considerable distance it was difficult to say whether or not there was a thrombus which occluded the sinus entirely. For these reasons he felt that it was justifiable to wait from twelve to twenty-four hours rather than perhaps needlessly sacrifice the sinus. He had opened up the sinus in one case and had found absolutely nothing, and the patient had died a few days later. There was some hæmorrhage on the removal of the first dressing, but it could be readily controlled by pressure with gauze. If fever and chills persisted he felt that the sinus was in all probability involved, and he would then open the sinus.

DR. DENCH, in answer to a question by Dr. Richards, said that if any of the tributary veins were left the infection might be washed through them. Experience had shown that the more completely the tributaries were tied off the better were the results.

DR. W. C. PHILLIPS referred to a case in which there was very extensive necrosis. He had exposed not only the sinus but the cerebellum, and a portion of the cerebral fossa. On opening the sinus there was a tremendous hæmorrhage, which

could not be controlled by any ordinary gauze pressure. After very great loss of blood he controlled the hæmorrhage by making a cork of gauze. At the time of the first dressing he took precautions against a recurrence of the hæmorrhage, nevertheless it occurred and was very profuse. Difficulty was again experienced in controlling it because there was no bone for counter-pressure.

The Technique of Maxillary Antrum Operations.—DR. H. HOLBROOK CURTIS read this paper. He said that the first thing was to determine whether a second bicuspid tooth or molar tooth was the cause of the disease, and whether the discharge was acute or ehronic. Irrigations through the natural orifice should be given a trial. If the natural orifice could not be used, and a tooth were suspected as the cause, then a tooth should be sacrificed and the opening utilized for the irrigation. It was quite easy to make obturators of varying shapes out of gutta-percha. A sheet of gutta-percha was dipped in boiling water, wrapped around a pencil and, after having been properly shaped, held in cold water until hard. An excellent irrigating fluid was composed of iodine, one dram, pyrogallic acid, half a dram and a saturated solution of boric acid sufficient to make one quart. The alveolar puncture was made for inspection, not for drainage. If the tooth were not suspected other modes of entrance should be sought. Too many specialists were content with making an opening in the canine fossa, and then employing irrigation. In acute cases this might prove sufficient, but in the more chronic ones it was absolutely necessary to thoroughly inspect and explore with the object of determining the exact pathological condition present. When a radical operation had been decided upon the patient should be told that the length of time consumed in effecting a cure was very problematical, but that after a short time he would be comfortable and could attend to much of the treatment himself. The periosteum should be divided and turned back, and a chisel used to enter the antrum. The opening should be made sufficiently large to allow the entrance of the bone forceps, and with the latter instrument the fenestration was completed. Strong carbolic acid and alcohol should be successively applied. The cavity could be still further cleansed by means of peroxide of hydrogen followed by normal saline solution. A gauze packing was then employed. After the granulation process had become well established, worsted should be sub-

stituted for the gauze because it could be introduced through a smaller opening. After from two to four weeks the worsted packing could be stopped and the peg could be inserted. This method was capable of giving good results, but often failed. A better operation was that in which, after making the fenestration as already described, an opening was made into the nasal fossa. The larger the nasal orifice the better would be the result. After the bleeding had been arrested the antrum should be lightly packed with gauze or wool, and the wound in the canine fossa closed by two or three sutures. The packing should be removed, preferably under anæsthesia, and if there was a foul discharge the antrum should be washed out. The opening in the canine fossa need not be so large in this as in the preceding operation. The operation through the inferior meatus was advantageous because it required no anæsthesia. It was, therefore, particularly applicable to patients who were not good subjects for anæsthesia. With the electric trephine the anterior third of the inferior turbinate should be removed. The perforation should be made about one-quarter of an inch above the nasal floor. The fenestration should be made very smoothly.

The Report of an Unusual Case of Frontal Sinusitis.—DR. CORNELIUS G. COAKLEY, of New York, reported this case, one in which there was an absence of septum in a frontal sinus. The patient was a woman of sixty-two who had previously enjoyed good health except for an attack of grip in 1898. In July, 1899, she began to suffer considerably from frontal headache, which ceased in a few weeks. In January, 1900, there was a swelling noticed about the right eye, and the eye was displaced downwards. On January 28 it ruptured spontaneously, and discharged thick and slightly offensive pus. There was no discharge in the posterior nares. In October of that year she consulted the late Dr. W. B. Noyes, who advised her to return home for a radical operation on the frontal sinus. The fistulous opening was enlarged and a portion of the right frontal sinus was removed and the cavity curetted. No drainage tube was inserted in the naso-frontal duct. After some months packing was discontinued, and simple irrigation employed. The irrigation treatment was continued daily for about one year. She then came under the speaker's care, *i. e.*, in January, 1903. The fistula was still present, and a probe, passed between the outer wall and the middle turbinal, en-

countered a small polypoid mass which bled freely. The mucous membrane of the left nasal cavity was normal. Transillumination of the antrum gave perfect illumination on each side. Both frontal sinuses gave practically no illumination. The right middle turbinal was removed under cocain. The underlying ethmoid cells were found filled with pus and granulations. These were all cleaned out and the catheter was passed into the right frontal sinus. The patient was advised to have the left frontal sinus explored first, and this was done. On January 4, 1903, under chloroform, an incision was made and the sinus opened. Thick pus escaped. The opening was enlarged until all parts could be explored by direct illumination. A similar opening was made in the anterior wall of the right frontal sinus. No trace whatever of a septum between the two sinuses could be found. Every trace of mucous membrane was removed from the frontal sinus cavity. There was a median posterior offshoot, and this gave no little concern. The entire cavity was packed with strips of iodoform gauze, and this packing was not removed for two weeks, there being no discharge and no elevation of temperature. The probe then detected no dead bone. Irrigation showed the naso-frontal duct to be occluded. The cavity was wiped dry and repacked, and thereafter at intervals of about one week the packing was changed without irrigation. A remarkable feature was the fact that the total quantity of discharge did not amount to three drams. The interesting features, aside from the abscess of the septum, were the very large size of the sinus and its healing without any osteoplastic operation.

DR. G. L. RICHARDS opened the discussion on the two preceding papers. He said that he had had one case of double frontal sinusitis on which he had operated at two different times, and had in time been able to establish communication between the two. In a recent case the probe passed upward and considerably beyond the median line.

DR. L. A. COFFIN referred to a recent case in which there had been no subjective symptoms, but the boy had been brought to him because of a bulging of the forehead. He opened the right side first, supposing there was a double sinusitis. The bone was found to be as thin as writing paper, and the sinus was filled with pus. A small sequestrum of bone was found in the sinus, and in probing, he thought the instrument passed

through the septum. On opening the other side he found a perfectly healthy sinus, and could discover no communication with the right sinus. On removing the dressing on the second day the left sinus was found to be entirely healthy. Whether or not the sequestrum was merely the septum between the large sinus and what appeared to be an accessory sinus he could not say, but the probe passed almost to the middle of the left eye. A week or two ago a laboring man had presented himself with a fistula, as in Dr. Coakley's case. An early operation would have prevented him for some time from earning his living, and hence the speaker contented himself with taking off his entire middle turbinal, curetting the ethmoid cells and establishing good drainage. This relieved the pain.

DR. CHEVALIER JACKSON, of Pittsburgh, said that his lamp would show the septum in the frontal sinus if the sinus were normal. Where transillumination showed a diseased lining in the maxillary antrum he did not feel satisfied with a mere examination with the probe, and for that reason he made an opening in the canine fossa sufficiently large to admit the finger for examination and for breaking down any septa that might be present. To keep the opening patent for some time he made use of a small canula made of malleable metal, and after its introduction it was expanded by means of an alligator forceps, and was thus retained. It could be removed with slight force and without doing any harm to the tissues.

DR. PRICE BROWN asked Dr. Curtis if there were any age limit after which he would not do the radical operation for antral disease, and if in an aged person he would do the operation in the anterior meatus or in the canine fossa.

DR. THOMAS HUBBARD, of Toledo, said he had used gutta-percha in some cases, and had found it a very poor material unless the plugs were changed very often, because it retained septic matter and exuberant granulations formed. By vulcanizing and polishing the material it was rendered less likely to retain septic matter.

DR. C. G. COAKLEY said he had been deeply interested in Dr. Curtis's paper because it showed clearly the faults of treatment that was not radical. In his opinion, acute cases of antral suppuration were not uncommon, particularly after an attack of the grip. He had never seen one of these cases in which the diagnosis had been made by actual puncture and washing that

had not recovered after a very few washings. His present treatment was to wash out the antrum every other day with normal saline solution, and blow out afterward any remaining fluid. He was not referring to cases arising as a result of disease of the pulp of the teeth, for they did not do so well under washing. He had never felt that he could approach these cases through the middle meatus because this opening was ordinarily so completely covered with the middle turbinal. For this reason he cocainized and made the puncture at the outer wall. In cases in which antral disease was suspected he did not hesitate to puncture, for, if done under aseptic precautions, it was attended by little or no risk.

DR. NORVAL H. PIERCE said he still claimed that the antrum could be reached occasionally through the natural opening. It was difficult, if not impossible, to get through the natural ostium in a natural position when the turbinal was of the normal size, but in these cases of antral disease accessory openings were frequently present, as had been proven by Zuckerkandl. It was probably through these that one gained entrance to the antrum. He believed it was good practice to make an attempt to enter through the natural opening before resorting to puncture.

DR. FRED C. COBB, of Boston, said that the dentists seemed to have great difficulty in detecting bad teeth and differentiating them from good teeth, and hence, one could not rely upon their decision in deciding upon making an operation. The washing out certainly relieved the pain, but he questioned whether it materially shortened the duration of the disease. He also doubted the efficacy of curetting the mucous membrane, because when the antrum became a reservoir for pus a polypoid condition existed in this cavity, and the condition was cleared up when the ethmoid was treated.

DR CURTIS did not understand that Dr. Coakley had advanced arguments in support of the opinion that the septum had not been destroyed. He recalled one case in which by merely touching the septum with a probe the instrument passed through, showing how easily a solution of continuity of the septum could be produced. With regard to age limit, he would say that the third operation described was particularly appropriate for aged people. He did not vulcanize the gutta-percha tubes, but if the patient were going away for some time he had

the tubes finished up in this way by his dentist. The point made about vulcanizing them was a good one. He had experienced no trouble from retention of septic matter in the gutta-percha. The test by heat and cold often enabled one to detect disease of the teeth.

DR. COAKLEY said he had had several cases of double empyema without communication between the sinuses. Mention had been made of secondary cavities, and it was well known that they not infrequently existed and constituted a bugbear in operating. For this reason a sufficiently large opening should be made in the anterior wall to make sure that such peculiarities were not overlooked. He did not doubt that an opening might have been made in a septum under the tension that must have been present, but in his case there was absolutely no trace of any septum having existed, and the sinus itself was very large. He had just learned from Dr. C. W. Richardson that he had opened up a sinus in which a septum was present, and at a second operation he had found the septum entirely gone.

ABSTRACTS FROM CURRENT LITERATURE.

Treatment of an Infected Corneal Wound with Acetozone.—J. F. Klinedinst, York, Pa.—*Jour. of E., E., and Th. Diseases*, November and December, 1902.

A piece of emery had been removed with a sharp piece of wood. On the third day (second day of observation) the condition was much worse; 1 per cent. atropin was continued every two hours, but the bichloride instillations (1:5000 hourly) were stopped, and one or two drops of acetozone, 1 grain to water 2 ounces, was ordered instilled every hour. The next day patient returned much improved. Acetozone continued hourly, atropin t. i. d.; he improved rapidly and was nearly well in a week. Acetozone (as confirmed by subsequent cases) rapidly controls bacterial infections, is a safe and powerful germicide. The above strength is enough, it causes a sharp, burning pain for a few seconds; stronger solutions burn more, but do no harm.

J. L. M.

The Prognosis of Myopia.—Francis Volk, New York.
—*Ophth. Record*, August, 1902.

In myopia of any degree, if the radius of curvature is less than 7.65 mm. we have a case of refractive myopia and not an elongation of the eyeball; in all reasonable possibility the myopia will not increase, and with full correction our patients may continue their studies, or use of the eyes, with every prospect of good and useful vision. Furthermore, with a reduced curve, showing a normal or longer radius, with any degree of myopia, then we have for consideration a case of axial myopia that may tend to increase, even to serious impairment of sight. These cases must have a full correction of the myopia with an examination of the refraction and glasses every six months or a year. If in time we detect any increase in the myopia our patients must be cautioned, but a decided increase will call for atropin, if necessary, and entire cessation of the use of the eyes for close application until the refraction remains stationary for at least a year.

J. L. M.

Aprosexia in Relation to the Eye, Ear, Nose, and Throat, Especially in Child Growth.—Derrick T. Vail, Cincinnati.—*Cincin. Lancet-Clin.*, February, 28, 1903.

In 1887, Guye, of Amsterdam, coined the term "aprosexia." Goulds' Students' Medical Dictionary (1898) defines it: "Aprosexia (προσέχειν, to give heed): A mental disturbance consisting in inability to fix the attention upon any subject; an inability to think clearly and to comprehend readily what is read or heard; a condition sometimes observed in the course of chronic catarrh of the nose and pharynx."

One explanation given for aprosexia by various authors, especially Guye (*Deutsche med. Wochen.*, 1887, No. 43, and 1888, No. 40), Shaw, of London (*London Practitioner*, 1890, p. 8), from the anatomical observations of Axel-Key and Retzius, is that since the intracranial veins, sinuses and lymph spaces have intimate communication with the vessels of the sphenoid, ethmoid, frontal sinus and naso-pharynx, the frontal brain, which is the principal seat of voluntary cerebration, becomes impaired in circulation and function by the passive hyperæmia and defective lymph drainage undoubtedly present in naso-pharyngeal swellings and inflammations, becoming, as it were, clogged by its own metabolism débris. Cerebral malnutrition, brain exhaustion, heedlessness, hebetude and dull headache result; in a word, "aprosexia."

Guye explains the headache (*Brit. Med. Journal*, 1899, Vol. ii, p. 711): "The air contained in the accessory nasal cavities will be resorbed and so its pressure diminished as soon as the free communication with the nose is impaired by swelling of the mucous membrane. Such a cavity will then act as a dry cup, producing collateral hyperæmia *in vacuo*." He calls attention to the fact that the headache resulting is quickly relieved by Politerization of the nose, which restores the air pressure within the pneumatic accessory sinuses of the nose to the normal.

Dr. Vail extends the term aprosexia in connection with ocular defects, although it must be confessed that here it is reflex from eye strain, causing sheer mental exhaustion.

Those who have to do with the mind training of children too often fail to inquire into the causes which lead to the exhibition of mental obtundity in a child.

A closer study of some of these backward children will reveal that the mental obtuseness is due to some physical defect, causing early brain tiring and lack of concentration or thinking power. Aprosexia is, of course, not always due to physical disability. A child may, it is true, inherit a weak or vicious mind as an expression of degeneracy, and some children possess animal instincts so strong as to render much or even slight mental exertion quite beyond their capabilities. But I know as a matter of observation and from a vast number of cases that aprosexia is very often the result of some physical ailment, like catarrh, deafness, amblyopia, refractive errors or anomalies of the ocular muscles. Teachers are now awakening to the fact that aprosexia and retarded mentality calls for medical or surgical treatment.

The principal eye defects we meet with as a cause for aprosexia are amblyopia from congenital refractive errors of high degree.

We have to consider many kinds of asthenopias: Refractive, accommodative, spasmodic, muscular, catarrhal, or reflex.

Aural defects and diseases also produce aprosexia. Otitis media purulenta, perforation of the membrana tympani, mastoid disease, caries of the ossicles, the various forms of osteitis affecting the petrous and mastoid portions of the temporal bone, catarrhal deafness, tinnitus aurium, deafness following measles, scarlatina, etc., all make Jack a dull boy; and the ear disease may be so insidious in its onset and so remote and ap-

parently insignificant that it is quite unrecognized. It is easy to see how a slightly deaf child becomes apparently dull and slow to respond.

Since reading the opinion of the authorities cited, I have thought that the hebetude, drowsiness and impaired mental vitality present in aural disease may in some way be due to the active or passive meningeal hyperæmia or to the sluggish lymph circulation in the brain membranes contiguous to the seat of aural disease, for we must remember that the middle ear and mastoid lie just under the brain and closely related to the latter through numerous lymph and venous communications. Even in adults one of the pronounced symptoms of middle ear and mastoid disease is marked depression of spirits and mental exhaustion—in a word, aprosexia.

The same general observations may apply to the upper air tract. Children affected with naso-pharyngeal catarrh are usually dull, feverish, sleepy and unable to hold their attention longer than a few minutes. Independent of the observation of others. I have often noticed hebetude as a symptom of defective nasal respiration, and we are all familiar with the "adenoid face." In many cases of ear disease we should not fail to recognize the naso-pharynx as the storm center.

Discussion.

DR. JOHN W. MURPHY: Hill examined about seven hundred children in the public schools of Great Britain, and of these one hundred were looked upon as dull, not able to get their lessons or keep up with their classmates. Of these one hundred, twenty-five had adenoid vegetations or hypertrophy of the pharyngeal tonsils. Here we have 25 per cent. of the so-called dull children suffering from adenoid vegetations and hypertrophied tonsils, or about four per cent. of the total number. I have no doubt that in our own schools we would find 8 to 10 per cent. (if properly examined) suffering from aprosexia.

The function of the faucial tonsils, has not been as yet decided. I believe the most generally accepted theory to-day is that the faucial tonsils produce leucocytes or aid in the formation of leucocytes which have the function of destroying pathogenic germs which are present in the mouth. We know that they are quite active in early life, and we know no harm results after they have been removed. Whatever is formed in the tonsils seems to be secreted on the surface.

Shurly recently reported a case in which a lingual tonsil was removed from a girl sixteen years of age. She was well nourished and had no symptoms except a slight cough and difficult deglutition. What he supposed to be lingual tonsil the size of a pigeon's egg removed from the base of the tongue, upon examination proved to be the thyroid gland, and a marked myxœdema followed its removal.

This subject of aprosexia is one to which a great deal of attention has been given, especially during late years, and as most of the children suffering with the disease are benefited by operation it behooves us to give them the chance of profiting by it.

S. P. KRAMER: I rise to ask a favor of my friends the specialists, and that is that they stick to the empirical knowledge they obtain from clinical experience, and refrain from such wonderful physiology as they have brought before our attention to-night. The physiologist well knows that deficient oxygenation of the blood manifests itself by dyspnœa. Now, if the laryngologist would say that certain children are benefited by this operation he would, I think, have good empirical ground upon which to stand as the result of clinical observation. The physiologist does not know that the attention center is in the frontal lobes; he does not know that this lack of concentration and attention is due to a hyperæmia (as the laryngologist asserts) at the base of the brain, and I think the serious part of the whole affair is that they weaken really an excellent position by their erroneous physiological conclusions.

J. A. THOMPSON: Children with adenoids do suffer from chronic carbonic acid gas intoxication; they manifest air hunger. The night terrors, which are common, are really dyspnœa and a sense of suffocation.

It is one of the elementary principles of chemistry that osmosis will not take place through a membrane that is not moist on both sides. The interchange between the oxygen of the air and the carbonic acid gas of the blood is a process of osmosis. If the air is not properly warmed and moistened in passing through the normal nose and pharynx, it will take too much water from the lower respiratory passages, and the mucous membrane becomes abnormally dry, so that the proper osmosis cannot take place. The blood is not properly aërated in the lungs. If we operate for removal of the adenoids sufficiently early we can correct these defects and get results,

even if our explanation of them may not be physiologically correct.

There is one point in the study of aprosexia that has not been brought out so far in this discussion. This condition may be produced in adults by chronic suppuration in the ethmoid cells. I operated on a contractor of this city some years ago. He told me after the operation and after his mental symptoms had cleared up that just before the operation he was closing out his business and finishing up his contracts as rapidly as possible because he thought he would soon be insane. The symptom on which he based this opinion was his inability to concentrate his mind for more than two or three minutes at a time upon any subject. While engaged in the discussion of any business or making calculations on the plans for his work in spite of himself his attention would wander off to trivial matters. After two or three minutes he would get back to the subject at hand, but in a short time would again find himself unable to concentrate his attention on the matter in hand. After thorough drainage of the ethmoid cells was established his ability to think accurately and plan definitely came back to him. I have seen two such cases in adults, both of them occurring in connection with chronic suppuration in the ethmoid.

BOOK REVIEWS.

DISEASES OF THE EAR, A TEXT-BOOK FOR PRACTITIONERS AND STUDENTS OF MEDICINE. By EDWARD BRADFORD DENCH, Ph. B., M. D., Professor of Diseases of the Ear in the University and Bellevue Hospital Medical College; Aural Surgeon, New York Eye and Ear Infirmary; Consulting Otologist to the New York Orthopædic Dispensary and Hospital; Fellow of the American Otological Society, of the New York Academy of Medicine, of the New York Otological Society, of the New York County Medical Society, etc. Pp. 718, with 15 plates and 158 illustrations in the text. Third edition, revised and enlarged. D. Appleton & Co., New York and London, 1903.

We welcome this up-to-date revision of this first-class book. The technique of the operations upon the middle ear, mastoid—especially the radical operation—and for intracranial complications is gone into more thoroughly than in the last edition. Two colored plates show, without explanatory notes, the

anatomy of the internal jugular vein and the technique of exploratory craniotomy.

Dr. Dench agrees with us that eczema aurium is not merely a local affection to be cured with the simple application of a germicide; in its treatment he very properly takes into consideration the constitutional condition of which the disease is but a local manifestation, of course removing the local exciting cause. In his experience alcohol has proved of but little service. "Constitutional medication and local applications must go hand in hand."

He has "seen a number of cases of sinus thrombosis with extension to the internal jugular vein" but in no instance the "hard cord-like band along the anterior edge of the sternocleido-muscle;" he has often found "a brawny swelling" just behind the ramus of the jaw, evidently caused by enlarged lymphatics. In the ordinary cases of diseases of the auditory conducting apparatus sufficient stress is never laid upon labyrinthine involvement, he says.

The typography, paper, etc. are very nice, fully sustaining the reputation of the publishers.

J. L. M.

SQUINT: ITS CAUSES, PATHOLOGY, AND TREATMENT. By CLAUD WORTH, F. R. C. S. P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, 1903. All rights reserved. Pp. 229, cloth, \$2.00 net.

A very valuable suggestive monograph written in a lucid, interesting style. We wish that most authors would content themselves with monographs instead of unnecessarily reduplicating text-books and manuals, with which the profession is surfeited.

One of the main purposes of this book, if not the principal one, is to demonstrate that the essential cause of squint is a defect of the fusion faculty (p. 59) and the importance of training it (best with the amblyoscope) as well as of correcting errors of refraction.

He has found distinct evidence of binocular vision at as early an age as six months. Normally the development of the fusion faculty is well advanced by the twelfth month and complete by the end of the sixth year. When this faculty is not well developed there is nothing but the motor co-ordinations to preserve the normal relative directions of the eyes, and permanent squint (at first occasional) may be caused by anything

which disturbs this unstable equilibrium. The degree of refractive error has very little to do with the question whether the patient will squint, in the first instance, although of course it becomes an important factor when the squint is once established. He found thirty hypermetropic children who do not squint for one who does.

In cases of constant monolateral convergent squint the usual routine treatment by glasses and operation gives extremely unsatisfactory results. In less than one-third of these cases the wearing of glasses causes the eyes to become "straight" (approximately five degrees) after a time and while glasses are worn. In the other two-thirds the deformity may be more or less removed by operation. But more often than not the deviating eye becomes very blind and the acquisition of any sort of binocular vision is quite the exception.

On the other hand his treatment if commenced early nearly always cures perfectly, securing good vision in each eye and good binocular vision.

In the last ten years our author has accumulated notes of 2337 squints and heterophorias of which 1729 suffered from convergent squint.

A careful distinction should be made between static and dynamic convergence (as in the case of refraction).

Congenital amblyopia is far less frequent than is generally supposed, and is never responsible for the extreme blindness so often found in old neglected cases of squint; by far the greater part of squinters' amblyopia is due to gradual loss of function in an eye which is never used.

In treatment he lays stress upon beginning early—he reports successful cases in which he tied spectacles on babies under a year and a half old, and one of five months of age! and considers operation only after (1) correcting refraction, (2) occlusion of the fixing eye, (3) atropinizing the fixing eye only, and (4) training the fusion sense.

1. Glasses, the same for near and far vision in children, must be worn constantly—without interval when awake, continue the retinoscopy atropin until the glasses arrive—correct all but about 0.5 D of hypermetropia, correct astigmia fully, correct myopia exactly, and in cases of anisometropia treat each eye as above. He has found by experience the above more satisfactory than the old practice.

2. In children with amblyopia worse than 6/36 or who have

lost central fixation, he occludes the fixing eye continuously with a pad for from two to eight weeks; if this is going to do much good one usually finds great improvement in the squinting eye in a fortnight, if there is none at the end of two months it is seldom worth while continuing the shade.

3. If the vision of the squinting eye is not much less than $\frac{6}{36}$ 1 per cent. atropin—ointment or a drop—is instilled into the fixing eye every morning for a few weeks or months; when the deviating eye's vision approaches normal, the atropin is stopped for two or three weeks; usually the squint returns, then atropin is ordered to the fixing eye only for the first seven days of each month. In a very young child occasionally what was the fixing eye continues to deviate upon stopping the atropin; this may be left for three or four weeks, but care must be taken lest this eye become amblyopic—the balance may easily be kept by atropinizing the other eye for a few days. The younger the child and the more recent the deviation the more successful is this treatment; it is continued until visual acuity becomes equal, or nearly so, to that of the fixing eye, or until the deviation disappears, or until the child's fusion sense can be trained with the amblyoscope. Usually vision cannot be much improved after the age of six years.

4. If a child with monolateral or accidentally alternating squint is brought early enough Worth tries to remove the fundamental cause by training the fusion sense with his amblyoscope—preferably between the ages of three and five years. It is seldom worth while trying after six years of age. Stereoscopic exercises are tedious and disappointing.

5. Operation is necessary when other means fail. Our author much prefers advancement to a tenotomy. By his operation * properly performed the immediate effect is the permanent result. If the squint is over 20 or 25 degrees he tenotomizes the internus at the same time, not to give more rotation but to avoid retraction of the globe. If there is hope for binocular vision he never tenotomizes the internus without advancing the externus; no harm results then.

Internal tenotomy should never be performed if dynamic convergence is subnormal.

You should get and study this book, no abstract can do it justice.

J. L. M.

* See page 204, May number.

DISEASES OF THE NOSE AND THROAT. By CHARLES HUNTOON KNIGHT, A. M., M. D., Professor of Laryngology, Cornell University Medical College; Surgeon Manhattan Eye and Ear Hospital, Throat Department; Member of the American Laryngological Association, of the American Medical Association, of the American Academy of Medicine, of the American Therapeutic Society, of the New York Academy of Medicine, etc. 423 pages, 147 illustrations. P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia, 1903. Price \$3.00 net.

An excellent, concise, clearly written conservative up to date exposition of this subject; the illustrations, typography, paper and binding are first class; the slight glaze of the paper insures better illustrations yet is not sufficient to be uncomfortable to the eye.

Only the essentials of anatomy and physiology are given, but they are practical. *e. g.* Following Brown-Kelly, he reminds us that the anterior ethmoidal veins anastomose with the veins of the dura mater and with the superior longitudinal sinus. Their close connection with the intra-cranial veins, and the absence of valves in their walls may account for their tendency to bleed. This rare hæmorrhage may be checked by firm plugging of the roof of the nose, leaving the lower part of the passage free for breathing.

The author approaches his subject with "an open mind, prepared at all times to discard the old test and the new."

J. L. M.

A CLASSIFIED INDEX OF THE HOMEOPATHIC MATERIA MEDICA FOR UROGENITAL AND VENEREAL DISEASES. By BUKK G. CARLETON, M. D., Professor of Genito-Urinary Surgery, in the New York Homœopathic Medical College and Hospital, and HOWARD L. COLES, M. D. Boericke & Runyon. Pp. 160. Price, \$1.50.

A well arranged repertory compiled some years ago by Dr. Coles from the standard works of Hahnemann, Allen, Hale, Jahr, Hering, Farrington, Cowperthwaite, and many others, enriched by the verifications of Dr. Carleton, who has used it during these years.

While especially valuable to those in genito-urinary practice this book may well prove useful in finding the curative remedy for an eye, ear, nose, or throat trouble. Syphilis is not an exception, but is an example of the rule that it is not safe to ignore the rest of the body in treating so-called "local" diseases.

THE JOURNAL OF OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY.

EDITOR,

JOHN L. MOFFAT, M. D.

ASSOCIATE EDITOR,

A. W. PALMER, M. D.

EDITORIAL.

NITROUS OXIDE ANÆSTHESIA.

OF the objections to this anæsthetic, venous engorgement bids fair to be the only one not surmounted. This, with its attendant risk to patients whose respiratory system is impaired, contra-indicates it in cases where congestion and subsequent oozing are to be avoided. It is claimed, however, that the discoloration is due not to an increased quantity, but to a heightened color of the venous blood; the pulse falls to normal (from the nervous acceleration) as soon as the patient becomes unconscious.

With skill and watchfulness anæsthesia by nitrous oxide may be prolonged indefinitely. In one instance it was administered through a tracheotomy tube for extirpation of the larynx; the patient was unconscious an hour and forty minutes (it could have been longer), and had no vomiting, retching, coughing, or oozing after the operation. For adenoids the operator must be quick and operate, if necessary, between doses of the anæsthetic.

There is an invention on the market consisting essentially of a mixing apparatus and a cap for administration through the nose alone. It is designed for dentists, but if it does all that is claimed it promises well for the adenoid operation. The theory, as we understand it, seems to be that with the first intimation of a return to consciousness the mouth will close and nitrous oxide will again be inhaled through the nose.

Whether or no this proves successful, prolonged administration of nitrous-oxide anæsthesia—and for serious surgical operations—is already an established fact.

J. L. M.

EXCLUSIVIST AND EXCLUSIVISM.

THE individual professions, the different mercantile businesses, and each of the mechanical trades are all broadening so much in their scope as civilization progresses—man's desires and requirements becoming more exacting—that one human mind or physical body seems unable to thoroughly master a whole profession. Therefore the necessity of dividing into specialties and exclusivisms.

Formerly the terms specialist and specialty were used. Lately exclusivist and exclusivism are gradually taking the places of the former. In the medical profession this may be for sundry reasons. Some consider a specialist one who, while he practices general medicine, still gives especial attention and study to diseases of a certain part of the body; while an exclusivist confines both his study and practice to one class of diseases, or to the pathological conditions of one organ, or possibly two very intimately connected and similarly affected organs. Others doubtless prefer the newer term just because it is new—in this ever-rushing age there is a constant desire to drop the old and an insatiable desire to take up the new. Then again the exclusivists of the learned professions may quite naturally prefer the newer term in order to differentiate themselves from the ever-increasing horde of self-styled specialists; such as the clerk at the jewelry counter who fits glasses, who is often called an eye specialist, etc.*

The object of this division of the sundry occupations is twofold: first, it greatly perfects the products; second, it reduces the cost of the same. In the medical profession, when the comfort, happiness and even the life of a human being are the commodity affected, the first object is the all-important one, while the second is markedly subsidiary. (Particularly with the large number of dispensaries now existing.)

Now let us consider for a moment if this idea of exclusivism or exclusive specialism in the medical profession really and al-

* This latter class is no more to be considered than are the chiropodists, etc., who style themselves "doctor." An oculist who does general practice is a specialist, if he refuses general practice is an exclusivist; so with the other specialties, otology, rhinology, laryngology, surgery, gynecology, etc.

ways is an unqualified advantage. Or, as we now have the exclusivist among us, is he the ideal?

The domain of medical science or cure of disease, of course including surgery, has so rapidly progressed, drawing needed information from almost all the "ologies" and mechanics also, that it is impossible for one human mind to comprehend all or nearly all the knowledge or so-called knowledge of the medical art. Nor has one person the time or ability to become expert with all the appliances that we now have to assist us in plying our profession. Therefore it is necessary that the study and practice of medicine (as a science) be divided and that a physician devote himself entirely to investigation and experimentation for the improvement of treatment in one class of diseases. But at the same time such investigator should endeavor as far as possible to keep abreast with his confrères who are investigating along other lines, because the object on which we physicians work, the human organism, is the most delicate and intricate mechanism in the universe. It is so peculiarly constructed that there is greater interdependence of its component parts than in any other machine.

So much for the investigating duties of the exclusivist; now what of his practical side, the cure of disease? For the foregoing reasons there are a large number of cases (the less common ones) which can be better cared for only by the exclusivist, but some can be properly treated only by him.

In practice it is still more necessary that the exclusivist keep abreast with the progress in other fields, because certain complications may supervene, which, if not correctly diagnosed, may result seriously for the patient.

While the division into exclusivisms we believe is the only logical path for progress in medicine, still the manner in which the exclusivist takes up his chosen department should be considered.

In this rushing age the medical graduate generally takes some special course or courses immediately after receiving his sheep-skin, then attaches himself to a clinic in his specialty; all of which is for the best. But on the other hand, immediately after finishing his special course he settles down in private as well as in hospital practice as an exclusivist, therefore his mind is occupied almost entirely with consideration of diseases of one class to the exclusion of other maladies. What is the con-

sequence? Naturally, during the special course more thought has been given to the diseases outside his specialty which depend upon its pathological conditions than *vice versa*; therefore when practicing it is quite difficult for him to recognize that a disease within his field may and does depend upon a pathological condition without it. Furthermore, in thus confining himself too closely to his own field, he is prone to restrict himself to the particular method of diagnosis in his own specialty almost to the exclusion of others, thereby possibly overlooking complications. Examples of such oversight most of us have seen. Would it not be advantageous for our young exclusivist to work in a general clinic?

Considering exclusivism along these lines, is it not really more beneficial that the exclusivist be for a few years an exclusive non-exclusivist in practical study of general medicine or, in old-fashioned parlance, a general practitioner?

It is not so infrequent as it should be for an exclusivist to overlook some other trouble—perhaps a more important one—and thus lose time which might prove invaluable to the patient.

A. W. P.

THE HOMŒOPATHIC TREATMENT OF DISEASES OF THE EYE, EAR, AND THROAT.

E. H. LINNELL, M. D.,

Norwich, Conn.

IT is difficult to demonstrate the efficacy of remedies administered internally in special work. This is explained by the fact that we seldom rely upon the indicated remedy alone. In affections of the eye, for instance, a refractive error is corrected, or a mydriatic or myotic is prescribed, or a local application to the conjunctiva is used; so that, even if a remedy is simultaneously prescribed, it is impossible to demonstrate scientifically how much the resulting relief of subjective symptoms or cure of disease is due to a single factor in the treatment.

Similarly ear diseases are treated with inflation, massage, electricity, etc., in connection with the internal remedy, and gargles, sprays, and topical applications constitute a part of the treatment in the majority of nose and throat affections. I have been surprised in looking over my case records to find in how few cases, comparatively, I have relied upon the indicated remedy only. This must necessarily be the case, and yet we, as homœopathic specialists, believe that we are more successful than others, and we have confidence in our remedies as an important aid in the attainment of better results. It would be gratifying to be able to show convincing proof of our success, and to demonstrate to the satisfaction of the candid investigator the efficacy of our remedies.

I know of no other way of accomplishing this end than by publication of cases successfully treated by the indicated remedy, administered singly and alone: cases where an accurate diagnosis has first been established. Too many of the cases reported in our literature do not command confidence because of indefinite or inaccurate diagnosis. As a contribution to this end I submit the following cases selected from my records.

Chenopodium in Affections of the Internal Ear.

Mrs. B., about forty years old, first consulted me in January, 1894, and gave the following history: Four years previously, when much debilitated as a result of care and anxiety, she experienced suddenly a sensation as of a blow upon the left ear, attended with roaring tinnitus. These symptoms lasted three or four days, and disappeared completely. One year later, she awoke in the morning suddenly with rushing, roaring tinnitus, this time in both ears, as of water pouring over a dam. The tinnitus had continued in varying degree, and with periods of short intermission, until she consulted me; that is, for three years. The tinnitus had been accompanied with vertigo at times, and with impaired hearing, but she stated that her hearing had apparently been normal during the period when the noises had been absent.

Examination showed each membrana tympani in practically normal condition. Nothing more than a trifling dullness was noted. The Eustachian tubes were patulous. R. h. d. (w) = 4-60. L. h. d. (w) = 18-60. Bone conduction was absent on each side. Before consulting me she had been under treatment by another specialist without apparent improvement. In the course of conversation she stated she heard shrill, high-pitched noises better than low sounds, and had most difficulty with the human voice. As she expressed it, she "heard many sounds that she was not expected to hear," but was "deaf for the voice." This at once suggested chenopodium, which was prescribed in the sixth attenuation, and was followed by prompt and gratifying results. It was continued four times a day for several months. In August, 1895, about a year after my last prescription, she came into my office for examination in response to my request. Her condition was as follows: There was no apparent difficulty in hearing my voice, and she stated that she never experienced the slightest symptoms of deafness. She was entirely free from tinnitus, except upon rare occasions, as after loss of sleep or from similar causes of a depressing nature, and at such times it was so slight as to be scarcely noticeable. There was no vertigo. The membranæ tympanorum were of good luster, but somewhat retracted, and vibrated freely with the otoscope. The fork was heard distinctly from each mastoid, and Rinne's test yielded a positive result on the right side and a negative result on the left side. Hearing for the watch was 27-60 for the right ear and 33-60 for the left. I neglected to

state that a slight atrophic naso-pharyngeal catarrh was noticed at my first examination.

It is difficult to make a positive diagnosis in this case, but a sudden exudation, serous or bloody, in each labyrinth, with a secondary or perhaps coincident slight catarrhal otitis media, seems to afford the most rational explanation of the symptoms present, subjective and objective, and the improvement in the labyrinthine symptoms may, it seems to me, be fairly attributed to the remedy prescribed. It will be remembered that the condition had lasted for upwards of three years when the patient first came under my observation, in spite of treatment, and a spontaneous recovery was hardly anticipated.

The two following cases afford further evidence of the value of the remedy in such affections.

Miss C. E. B., a school teacher, fifty years of age, had been slightly deaf in the left ear for several years. There was evidence of slight catarrhal inflammation of each middle ear with some implication of the left labyrinthine structures, as evidenced by diminished bone conduction on that side, with a retracted drum membrane which was lacking in luster. The right membrane was normal in appearance, but the hearing for my watch was slightly diminished in this ear also. The Eustachian tubes were easily dilatable, but inflation was not followed by any improvement in hearing. That of the right ear was 36-60 for my watch at the commencement of treatment, and that of the left 8-60. *Chenopodium* 6x was prescribed on the symptom of a "consciousness of her ears," as she expressed it, and a sensitiveness to musical sounds. Under the action of this remedy, and without other treatment, in three months the subjective sensations and the sensitiveness entirely disappeared. She expressed herself as "having no trouble in hearing," and the test with the watch showed R. h. d. 52-60, L. h. d. 50-60.

The third case was that of a lady sixty-seven years old, who had been deaf four or five years in the right ear and in the left only about a month. Examination showed both drum membranes to be of normal appearance and vibrating well with the otoscope. The only abnormality noticed was that the light spots were smaller than in a healthy ear. The Eustachian tubes were normally patulous, and inflation produced no improvement in her hearing. Bone conduction was absent in the left ear and diminished in the right. No accurate test of the hear-

ing was recorded at the first examination. She complained of constant tinnitus like rushing water. Loud noises, like the rumbling of carriages in the street, were very annoying. I gave her *chenopodium* 6x, to be taken four times a day. Improvement was noticeable very soon, and after taking the remedy for six weeks the tinnitus was gone and the subjective symptoms of sensitiveness to noises was no longer felt. Bone conduction on each side was nearly normal, and she experienced no deafness for ordinary conversation. She heard my watch at two feet with the left ear, but not at all with the right, although the hearing was apparently but slightly deficient for other sounds. She had a slight relapse soon afterwards, when *chenopodium* again relieved her.

I do not know of any systematic proving of *chenopodium*, but in a case of poisoning by the drug when administered as a vermifuge, reported in the *Maryland Medical Journal*, November, 1878, we find the following symptoms: "Deafness to sound of voice, but exquisite sensibility to sounds of passing vehicles; each, as it rolled by, sounding like roaring of immense cannons right into the ear, in which also there was annoying buzzing." Deafness and tinnitus have occurred in other recorded cases of poisoning by the drug.

I think, therefore, the cases narrated may be regarded as instances of homœopathic cures, and the condition of deafness for the voice with sensitiveness to other sounds and accompanied with roaring tinnitus, I have come to regard as a reliable indication for the remedy. In addition I would like to put on record as clinical symptoms which disappeared while taking *chenopodium* the following, viz.: absent or deficient bone conduction, roaring tinnitus synchronous with the beat of the heart, a consciousness of the ear, sensitiveness to musical sounds and to cold, hearing better for shrill, high-pitched sounds than for low tones. The drug seems to have a special affinity for the structures of the labyrinth.

Lycopodium in Nyctalopia.

Mr. C., eighty-two years old, consulted me in June, 1895, for the following symptoms: For two months he had experienced increasing difficulty in seeing in a dim light until he could hardly see anything unless under good illumination. As he expressed it, he "could not tell a black man from a white

man." After correction of a slight myopic astigmatism his distant vision was 15-40 o. u. and he could read Sn. 1.25. He could read by lamplight without much difficulty. His arteries were tense and hard, and he had had frequent ecchymoses of the right ocular conjunctiva. He had had an attack of grip a few weeks previously, and had not thoroughly regained his strength, and his vision had suffered more coincidentally. He complained also of a nearly constant frontal headache, which was aggravated every afternoon about 4 P. M., at which time his vision began to fail. His general health was very good for a man of his years and his appetite and digestion were satisfactory.

The ophthalmoscope showed a slight diffuse cloudiness of each lens and a posterior polar cataract in the right, which was presumably congenital. Nothing abnormal was noticed in the fundus of either eye. Lyc. 30 was prescribed without correction of the refraction or any other treatment. I did not see him again, as he lived in a distant town, but I heard from him occasionally. I renewed the prescription twice during the next six weeks, and the report each time was that he improved steadily. Some months later I learned that he had little if any difficulty in seeing. He died about a year later of cerebral apoplexy. The diagnosis of anæsthesia of the retina from impaired circulation seems warrantable, and the pathogenesis of lycopodium justifies the prescription. We know it is a remedy particularly applicable to degenerative senile conditions, and one of the remedies to be thought of in atheromatous changes in the coats of the vessels. The aggravation about 4 p. m. is one of the grand characteristics of the remedy, and it is one of the few remedies having the characteristic symptom of nyctalopia or night blindness. (Boyle also mentions bell., cad. m., hyos., stram., verat. alb.) Of course no remedy can restore the elasticity of diseased and brittle arteries, but it seems probable that lycopodium has some influence in arresting the progress of such changes and in improving the nutrition of parts supplied by vessels commencing to show such changes.

Iodoform in Opacity of the Crystalline Lens.

Mrs. P., about fifty years of age, consulted me in May, 1894, for a scotoma before the left eye "like a bee." Ophthalmoscopic examination showed a superficial-cortical opacity toward the nasal side of the lens, but not reaching to the periphery. The opacity was uniform, not striated in outline. A

much smaller opacity was discovered at the same spot in the right lens. The scotoma had annoyed her for ten days. She was not strong, but complained of no other symptoms except a chronic form of indigestion, characterized by pain after eating, and much flatulence. Her central vision after correction of refraction was normal. I gave her iodoform 3x. Six days later she called again, and reported that the scotoma was smaller and less dense. The "bee had become a fly and was translucent," as she expressed it. The medicine was continued with progressive improvement until in August the right lens was perfectly clear and the left showed only two small, short, narrow lines at the former location of the opacity. Incidentally the stomach symptoms had been much relieved, so that she said she was having less trouble in that direction than for years. I saw her at frequent intervals until her death a few months ago, and she never again complained of the scotoma. I have no later record of an ophthalmoscopic examination, but have every reason to believe that the lens remained transparent. I have never known a lenticular opacity to spontaneously clear up, and think the improvement in this case may fairly be attributed to the remedy employed.

Hirschberg and Hutchinson have reported cases of toxic amblyopia with central scotoma occurring, one after external, and the other after internal administration of the drug, but I find nothing in its pathogenesis or toxicology to suggest any influence upon the lens. I mention this case for what it is worth. Possibly further experience may substantiate the suggestion which it affords of proving a successful remedy in incipient cortical cataracts.

Guaiacum in Tonsillitis.

A boy had a temperature of 103°, with headache, anorexia, and sore throat. Tonsils were swollen, the right more than the left, and studded with yellow points. The mucous membrane was of rather a pale red color without much secretion. The pain on swallowing was very severe and extended toward the ear. All the symptoms yielded very rapidly to guaiac ix. This is only one of several similar cases where what seemed to be the commencement of phlegmonous tonsillitis was very promptly cured by this remedy. The indications are similar to those of belladonna and of mercurius, and rather a close discrimination is called for. Guaiacum lacks the increased secre-

tion and the soggy tongue of mercurius. The redness is paler than with belladonna, and the pain extending toward the ear is more marked in guaiacum. A rheumatic or gouty diathesis would be an additional indication.

Nux Moschata in Episcleritis.

Mrs. D. consulted me on account of sharp stitching pain in the left eye. Examination showed a nodule in the episcleral tissue situated halfway between the margin of the cornea and the outer canthus, of a faint bluish color, and surrounded by considerable injection of the deep vessels. The pain and inflammation were promptly relieved by nux moschata and the nodule gradually disappeared. I have found this one of the most useful remedies in the disease mentioned, which is often tedious and relapsing, fresh nodules developing as the first are relieved. The subjective symptoms are not particularly characteristic, but it is said to be especially indicated when the disease attacks the temporal side of the eye. It is to be compared with kalmia, mercurius, and thuya, and the concomitant constitutional symptoms will aid in making a choice.

43 Broadway.

INTRA-OCULAR ANTISEPTIC TREATMENT OF A CASE OF POST-OPERATIVE INFECTION.

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IN bringing the following interesting and unusual case to the notice of the profession it is not my purpose to laud a remedy or applaud a method, but simply to point to the possibility of intra-ocular antiseptic treatment of post-operative or traumatic infection. We have all heard of the infected eyeball which was nursed back to health with more or less complete restoration of function (according to our informant's presumption on our ignorance and good nature), but to most of us it was never a case in hand—always in the abstract, always a test of faith. Our cases always succumbed to the inevitable and left us to "explain" to the anxious relatives and to strengthen the unfortunate patient in his conviction that the taking of a cold at the critical moment was the underlying cause. Whatever the subterfuge, it was but an admission of our conviction that the prognosis was the gravest, and that we were practically helpless to combat the condition by staying the progress of the invading germ.

The case in point is that of Mr. A. B., aged seventy-three years, with senile cataract in each eye. Patient in feeble health, with pronounced albuminuria. He entered the hospital ward on July 6, and was given the usual preparation. The operation for cataract was performed by Dr. Royal S. Copeland two days later. A portion of fluid vitreous escaped with the delivery of the cataract, and on removing the speculum a spasmodic closure of the lids forced out enough more to cause the eyeball to collapse to half its normal size. This complication, although at best an unfortunate one, had been encountered be-

fore in one or two instances, and was promptly met: the operator injecting normal salt solution into the eye by means of a specially prepared hypodermic springe. The iris floated back into place, the chambers refilled, the eyeball resumed its normal shape, and through a clear black pupil the patient was able to count fingers. The eye was dressed, care being taken to avoid all pressure, and the patient sent back to the ward.

Owing to the severe pain of which the patient complained, the bandage was removed on the following day contrary to the customary routine of post-operative treatment, but revealed no untoward condition. There was slightly more congestion than would be considered orthodox, but this was to be expected after the increased amount of manipulation. On the second day, after a very restless night, the patient presented a very inflamed and tender eye. Chemosis was marked, with photophobia and profuse lachrymation, a murky, sluggish iris and sharp, lancinating pains leaving no room for doubt as to the seriousness of the condition. Hot fomentations were ordered every ten minutes.

In the evening a yellow crescent extending along the line of the incision showed that infection had taken place, despite the careful technique which had characterized the handling of the case up to this time. Irrigation every hour with a half-saturated solution of boric acid, to which were added a few drops of benzozone, was now ordered, with hepar internally. Half house diet was allowed. The following morning the entire anterior chamber was filled with a yellow, thick muco-pus which forced its way out of the incision and filled the conjunctival sac. All of the symptoms previously mentioned were present in aggravated form; temperature 99.4° , pulse 88, full and bounding. The case seemed hopeless. After a careful deliberation the experiment of an intra-ocular injection of the non-effervescent non-toxic, yet powerful germicide, benzozone, was decided upon as the only possible hope of recovery. Accordingly a fresh solution of the drug of 1:10,000 strength was prepared and cautiously injected into the anterior chamber, the point of the hypodermic entering through the original incision. Very little of the exudate could be dislodged, but as much of the antiseptic was left in situ as could be retained. It was a trying ordeal for the patient, although the intense pain which followed subsided within half an hour. The amount of discharge remained constant throughout the rest of the day, but was much decreased on the fourth day and

had ceased entirely on the fifth, although the anterior chamber was still filled with exudate which completely occluded the pupil.

The subsequent history showed a steady improvement in the patient's condition, and on July 31, thirteen days after the experimental treatment, the patient was discharged with instructions to return in six weeks. He came into the clinic at the appointed time unaided and readily found his way about, depending entirely on his "hoodoo" eye. The pupil was still slightly obstructed with exudate, but the lips of the wound were well co-apted, the anterior chamber full, and the media clear. The patient was carefully refracted, and an 8D. spherical lens gave him a visual acuity of 15-120, a most gratifying result in the face of the extremely unfortunate and unfavorable circumstances which surround the case.

GONORRHŒAL INFLAMMATION OF THE MIDDLE EAR.—A CASE.

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IT has been my recent experience to have a case of otitis media suppurativa acuta of gonorrhœal origin, in which the infection extended from the nasal cavity through the Eustachian tubes to both middle ears. In my clinical experience in nose and throat work during the past fifteen years this is the first case of the kind that I have observed, although gonorrhœal rhinitis is not particularly rare. I have cited the case to three aurists, only one of whom had seen a similar condition. The history was clear, and a microscopic examination of the aural discharge revealed the presence of gonococci in large numbers.

In looking up the ætiology of otitis media suppurativa in several text-books I found no allusion to gonorrhœa as a causative factor, but have not made a careful examination of the literature of the subject. This would seem to indicate that aural infection is rare, and while on first thought, the source of the disease seems quite remote, on further consideration the facilities for direct extension of the inflammation from the nose to the middle ear make it appear strange that it should not occur more frequently. Doubtless a majority of the cases are not recognized as of such origin, for the patient would not be likely to tell the aurist that he had recently suffered from gonorrhœa. The mucous membranes of the eyelids and of the nose are often infected, and it would seem probable that in neglected cases the middle ear would frequently be involved. The oral mucosa seems to be immune, either because of the germicidal action of the saliva or of the mucous secretions.

62 West Fifty-first Street.

BROMIDE OF SODIUM IN THE TREATMENT OF TINNITUS AURIUM.

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I N the effort to cure a difficulty such as tinnitus aurium, the cause should first be removed if possible, and no means left untried to do this. There are cases, however, and their number is legion, where, even if the cause of disease is positively known, it is quite impossible to remove it. The treatment of noises in the ear is passed over slightly by many authors, although a most common and very annoying difficulty. Gradle* says:

“Neither the anatomic lesions causing tinnitus nor its physiologic mechanism are fully understood. It must, of course, be due to irritation of the intralabyrinthine nerve-ends. Pulsating sounds are due to the pulsation of the arterioles somewhere in the ear, and are often controlled by absolute rest, or transiently by compression of the carotid artery, but are aggravated by any exertion or excitement. In very rare instances pulsating noises have been caused by an aneurism of smaller intracranial or other adjoining blood-vessels. Snapping sounds, which are really objective and can be heard by auscultation through a tube from the meatus to the listener's ear, are occasionally due to spasm of the tensor tympani muscle, oftener, however, to contraction of the tensor palati muscle, which some people can control voluntarily.”

Wherever there is a general or localized active or arterial congestion of the brain, a diseased ear is likely to be affected by this condition. When the cerebral congestion is passive in character, due to an excess of venous blood in the sinuses, ear disturbance is not so likely to be experienced. Every investigator of brain diseases knows how intimately the ear and brain are related, and how very frequently disease of one will affect the

* “Diseases of the Nose, Pharynx, and Ear.”

other. I have often thought that a good aurist should first be a good neurologist, or, rather, have a more than ordinary knowledge of brain anatomy and physiology. Woakes,* author of one of the best works ever written on this subject, has endeavored, by means of a table, to show the morbid conditions present where tinnitus is a symptom of disease, and the characteristic sounds accompanying the different morbid changes in the ear itself, the brain substance, or its blood-vessels—arteries and veins. He believes there is a positive anatomical change to account for the several and varied sounds noticed by the subjects of tinnitus aurium.

Following is the table of Dr. Woakes:

OBJECTIVE CONDITIONS.		CHARACTER OF SOUNDS.
Labyrinthine congestion	Arterial	Pulsating or puffing sounds.
“ “	Venous, implicating sinuses of brain	Rushing, chattering, chirping sounds usually seeming to be located at a distance.
Anæmia	Extra-aural	Tidal noises.
Aneurism	“ “	Pulsating noises.
Fluid in tympanum or Eustachian tubes . .	Catarrh of middle ear	Bubbling and gurgling noises.
Congestion of membrana tympani, cavity of tympanum, or Eustachian tube, or of all these together	Passive dilatation of vessels of middle ear from obstructed E. tube and change in shape of drum-head Inducing	Tidal.
Chronic non-suppurative inflammation of middle ear. Gout. Syphilis.	Exudations and hy-perplasias with ad-hesions of movable parts	Tidal.
“ Progressive deafness.”	Contraction of ten-sor tympani muscle	“
Cerumen, fungi, foreign bodies in external canal. Eczema . . .	Otitis externa, reflex irritation of tensor tympani nerve from the otic gan-glion	“

* “ Deafness, Giddiness, and Noises in the Head.”

Gleason* gives a few practical hints as to the treatment of tinnitus aurium, and incidentally mentions hydrobromic acid and bromide of sodium as medicinal agents to be employed in palliating the intolerable condition of some people who suffer from noises in the ear.

“Next in importance to inflation of the middle ear is systematic massage with Siegle’s pneumatic speculum, by means of which the air within the auditory canal can alternately be rapidly condensed and rarefied, and motion be thus imparted to the membrana tympani and ossicles. This procedure is almost invariably followed by an amelioration of tinnitus if this symptom be present, and it probably constitutes the most satisfactory treatment for this annoying symptom, although freezing the tissues over the mastoid process by means of the spray from an atomizer containing ether, and exhausting the air within the auditory canal by means of a plug of oiled absorbent cotton, sometimes yields gratifying results. Full doses of hydrobromic acid or bromide of sodium are capable of giving a certain amount of relief from tinnitus when other measures fail, and generally secure rest at night with cessation of auditory hallucinations.”

Woakes† considers hydrobromic acid a specific for congestive labyrinthine conditions. He says:

“The first case to which, in an experimental way, the hydrobromic acid was given for the relief of these pulsating sounds, confirmed the correctness of the above line of argument by its immediate and marked success. It may be taken as a typical one from over a score of others equally satisfactory. The patient had been treated for suppurative inflammation of the middle ear with polypoid excrescences in the external canal, all of which objective conditions being removed he still complained of throbbing sounds, with giddiness and headache, increased by stooping or exercise. Hydrobromic acid, in 15-minim doses in water, was prescribed every four hours. Relief to these latter symptoms was immediate, and they shortly disappeared altogether. It is satisfactory to note that the experience of other observers has amply verified this result, so that the drug may claim the position of a specific remedy for con-

* “Essentials of Diseases of the Ear.”

† “Deafness, Giddiness, and Noises in the Head.”

gestive labyrinthine conditions, providing always the auditory apparatus be first relieved of any well-marked morbid process which, by its presence, might tend to keep up excessive vascular action."

My experience leads me to believe bromide of sodium to be one of the best medicinal agents known for the palliation and sometimes the cure of tinnitus aurium due to congestive conditions. Bromide of sodium has few equals as a means of overcoming active cerebral congestion. It lessens the quantity of the blood in the cerebral arteries, relieves pressure, and overcomes brain irritability. It calms the general nervous system, and induces dreamless, restless sleep. Under the influence of sodium bromide the nervous man becomes quiet and feels a general sense of comfort and restfulness; noises in the ear abate or disappear. There are full-blooded people whose brains are always actively congested, or at any rate hyperæmic. These people respond to bromide of sodium promptly, and results are usually satisfactory. They should be treated for a length of time to obtain permanent results. These people can usually take the remedy for a long time without injury. Anæmic people can take bromide of sodium only a short time and in very small doses. It is usually helpful because it induces sleep and gives the patient delightful rest and quiet and the ear sounds disappear or are but little noticed.

Some people are generally anæmic. They are weak, inclined to sleep while sitting up—can scarcely keep awake, indeed—yet they become instantly wakeful as soon as they lie down. These people should only be given bromide at bedtime. It should be given cautiously to weak and anæmic people, and to some never. It will set up very pronounced vertigo more certainly than any other drug.

On the other hand, some full-blooded people can take but little without becoming stupid. It helps the ears, but often affects the walk and speech. The walk becomes tottering, sometimes shuffling. Speech is slow and reminds one of the speech and articulation of a subject of cerebral abscess. In aged people it is likely to set up softening of the brain, and for this reason is an unsafe drug to use. The speech defects set up by the excessive use of bromide of sodium are aphasic in character. The patient, although perfectly sensible, is constantly inclined to use the wrong word or words in expressing himself. The persistent use of the drug will cause the develop-

ment of illusions and hallucinations, and finally fixed delusions. No drug will more certainly lead the patient to the madhouse than bromide of sodium if given in full doses for a length of time.

I was called to see a lady with an ear affection, who was also insane. Her ear trouble was supposed by her physician to have caused her mental derangement. She was the subject of fixed delusions, and large doses of bromide did not induce sleep. She had been taking bromide for several months for nervousness and pain in the ear. The bromide was stopped, and she made a perfect recovery in a few weeks.

Bromide of sodium is an excellent remedy with which to relieve tinnitus aurium due to congestive conditions, but it should be employed carefully, and the subject selected with judgment.

3421 Washington Avenue.

INFECTION FROM FOREIGN BODIES IN THE EYE.*

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INFECTION is the dread of modern surgeons ; and particularly is this true of the ophthalmic surgeon. The function of no organ of the body suffers worse perhaps from violent inflammation occasioned by infection than that of the eye. Slight abrasions of any part of this delicate organ from infected foreign bodies may lead to permanent impairment of its function and even to the destruction of the organ. Injuries that seem trivial in their nature and of no great importance, if accompanied by infection, may become a source of great danger to the patient and much anxiety on the part of the surgeon. The vascular and lymphatic systems of the eye are such that pathogenic bacteria or their spores are readily absorbed from direct wounds ; they may be found multiplying and spreading in the surrounding tissues and setting up inflammation in their course. When the tissues break down and suppuration occurs saprophytic bacteria may also be found.

Of the kinds of acute inflammation we distinguish three varieties : simple (or traumatic), septic, and infective. A simple or traumatic inflammation is one localized to a limited area, and subsides without suppuration when the cause is removed. Septic inflammation depending upon fermentation or putrefaction in the wound is due to the presence of saprophytic bacteria. Infective inflammation depends upon the presence of special micro-organisms. In our study of some cases of railroad injuries of the eyes we have endeavored to distinguish between lesions producing traumatic inflammation and wounds that were more or less infected. Differentiation between these two classes from slight injuries is somewhat difficult. Traumatic inflammation presents symptoms in the healing process of incised wounds by first intention.

In infected wounds the inflammation is of a more spreading character and the healing process is retarded. In an accompanying table of injuries of the eyes wherein the wound healed promptly after relieving the eye of the foreign body or the mechanical irritant, we have classed the injury under the head of traumatic inflammation.

If in addition to the usual symptoms of a simple inflammation there was a delay in the healing process attended by suppurative changes, even though slight, it has been classed as infective inflammation.

Have we any means of judging, with a reasonable degree of accuracy, whether or not infective changes will occur in recent injuries of the eye from foreign bodies? Several factors must be taken into consideration if we should attempt to answer this in the affirmative. First, we must consider the location of the injury and the nature of the foreign body inflicting the injury. Second, the manner and circumstances under which the injury is received. Third, the condition of the patient preceding the injury. Fourth, the condition of the patient immediately following the injury.

If the injury consists of a penetrating wound in the "danger zone," as described by Nettleship, that is, in the ciliary region, the danger of infection is increased, since the tissues of this region are prone to inflammatory action following lesions.

The form and nature of the foreign body are of much importance. If the trauma is produced by sharp-edged tools, or from metal of polished surfaces, the danger of septic infection is less than from injuries received by blunt instruments. The latter produce contused wounds which retain infected material much better than incised wounds.

Again, some substances acting as foreign bodies are essentially septic, while others are not so liable to be charged with infection. The manner and circumstances under which the injury occurs should always be considered. Injuries occurring in an atmosphere impregnated with dust, smoke, or offensive gaseous vapors are more liable to become infected.

The preceding condition of the patient is likewise worthy of note. Any predisposing cause of inflammation has marked influence in septic conditions. The age, state of health, habits, etc., are determining factors to a certain extent. The vitality of the patient and his powers of resistance should not be overlooked.

The condition of the patient following the injury should also

be taken into account. Eyes already affected by muco-purulent conjunctivitis or lachrymal inflammation increase the danger of infection from foreign bodies; especially is this true of corneal wounds. The infection may accompany the foreign body and light up the inflammation, or else find a culture medium for the development of the organism for subsequent infection.

In this short paper I desire to refer to my case book, from which a record of sixty-one cases of railroad injuries to the eyes is given on the next page.

The Location of the Injury and the Nature of the Foreign Body.

Injuries of the Cornea.—Of the thirty-two cases of corneal injuries enumerated it is observed that sixteen of them, or fifty per cent., were infected. By referring to the above table and comparing the cause of accident in the infected and non-infected cases we shall see that the nature of the foreign body inflicting the injury is significant from our point of view.

Injuries occurring from hot cinders, sparks from the engine, or chips of metal flying from the tools used by the artisans, or from fragments of metal flying from the object being worked upon, are not so liable to produce infection. These metal chips are heated by the force of the blow occasioning them and are not charged with infection. If they are imbedded in the cornea and are removed soon after the injury occurs, and the wound is not infected from other sources, we may expect the wound to heal kindly and promptly, with no other symptoms than might be expected from the degree or extent of injury to the tissue involved. On the contrary, if the foreign body consists of scales of rusty iron, scales of paint, particles of coal, or cold cinder flying through the air charged with dust and smoke, the injury is more likely to be infected.

Injuries of the Conjunctiva.—The table of injuries shows that the conjunctiva was the seat of injury in eighteen cases; of which three, or sixteen and two-thirds per cent, were infected. These were injuries from dirt, foreign bodies unknown, and scales of iron. The other fifteen in nearly every instance were from hot cinders, sparks from the engine, chips of metal, etc.

Injuries of the Globe of the Eye.—The remaining eleven cases referred to in the above table may be classed under the head of contusions; two of these were penetrating wounds

CASE.	Place of Accident.	Cause of Accident.	Location of Injury.	Traumatic Inflammation.	Infective Inflammation.
1	Machine shop	Broken stay-bolt	Globe R. E.	(Enucleation.)	
2	Paint shop	Paint	Cornea L. E.		x
3	On train	Piece of coal	Cornea R. E.		x
4	On train	Hot cinder	Cornea L. E.	x	
5	R. R. yards	Piece of spike	Cornea R. E.		x
6	Machine shop	Chip of metal	Conjunctiva L. E.	x	
7	Machine shop	Fragment of steel	Conjunctiva L. E.	x	
8	R. R. yards	Cinder or coal	Cornea R. E.		x
9	On train	Piece of coal	Cornea L. E.	x	
10	Machine shop	Chip of metal	Cornea L. E.		x
11	On engine	Piece of coal	Globe L. E.	x	
12	On train	Spark from engine	Cornea R. E.	x	
13	Machine shop	Chip from hammer	Cornea R. E.	x	
14	On engine	Piece of glass	Conjunctiva R. E.	x	
15	On engine	Spark from engine	Conjunctiva L. E.	x	
16	Round house	Piece of metal	Globe R. E.	x	
17	On engine	Cinder	Conjunctiva L. E.	x	
18	Machine shop	Dirt	Conjunctiva R. E.		x
19	Machine shop	Scale from boiler	Cornea L. E.		x
20	On train	Piece of coal	Cornea R. E.		x
21	On engine	Piece of glass	Globe R. E.	x	
22	On engine	Cinder	Cornea L. E.		x
23	Machine shop	Hot cinder	Conjunctiva L. E.	x	
24	On engine	Cinder	Conjunctiva L. E.	x	
25	On train	Cinder	Cornea L. E.	x	
26	Machine shop	F. B. unknown	Conjunctiva L. E.		x
27	On engine	Wet waste	Globe L. E.	x	
28	On engine	Coal dust	Conjunctiva R.&L.E.	x	
29	On engine	Turpentine	Conjunctiva R.&L.E.	x	
30	Machine shop	Scale from nut	Cornea R. E.		x
31	Machine shop	Piece of bolt head	Conjunctiva R. E.	x	
32	On engine	Cinder	Conjunctiva L. E.	x	
33	On engine	Cinder	Cornea R. E.		x
34	R. R. track	Chip from chisel	Conjunctiva R. E.	x	
35	Machine shop	Chip of stay-bolt	Cornea L. E.	x	
36	Round house	Piece of iron	Globe L. E.	x	
37	Machine shop	F. B. unknown	Cornea L. E.		x
38	Machine shop	Chip from truck box	Cornea R. E.	x	
39	On engine	Muriatic acid	Conjunctiva R. E.	x	
40	On engine	Hot cinder	Cornea L. E.	x	
41	On engine	Hot cinder	Conjunctiva L. E.	x	
42	On engine	Lubricating glass	Globe L. E.	(Evisceration.)	
43	On engine	Cinder	Cornea R. E.		x
44	On engine	Piece of coal	Globe R. E.	x	
45	Coach shop	Wrench	Globe L. E.	x	
46	On engine	Chip of iron	Cornea L. E.	x	
47	Machine shop	Piece of iron	Cornea R. E.	x	
48	Round house	Chip of iron	Cornea R. E.	x	
49	Machine shop	Scale of iron	Conjunctiva L. E.		x
50	Machine shop	Chip of metal	Cornea R. E.	x	
51	On engine	Cinder	Cornea R. E.		x
52	On engine	Hot cinder	Cornea R. E.	x	
53	Machine shop	Chip from bolt	Cornea R. E.	x	
54	On train	Cinder	Cornea L. E.		x
55	R. R. track	Cinder	Conjunctiva R. E.	x	
56	On engine	Piece of coal	Cornea L. E.	x	
57	On train	Cinder	Cornea L. E.		x
58	On engine	Piece of coal	Globe L. E.	x	
59	Machine shop	Wrench	Globe R. E.	x	
60	On engine	Hot cinder	Cornea R. E.	x	
61	On train	Cinder	Cornea R. E.		x

(Nos. 1 and 42) in which an enucleation or evisceration was necessary. The inflammatory symptoms were quite marked in most of these cases, but no evidences of infection were observed.

From the foregoing it would seem that our conclusions are justified in saying that the question of first importance in a prognosis of eye injuries is the location of the lesion. Lesions occurring in the ciliary region are always to be regarded as more or less serious.

Injuries of the cornea seem to be next of importance to infection.

The Manner and Circumstances under Which the Injury Occurs.

We have already referred to injuries occurring in an atmosphere charged with dust, smoke, offensive vapors, etc. These are very apt to be followed by infection. If the foreign body itself is not contaminated, the wound may become infected by the vitiated air.

Floating particles of dust and tiny missiles in the atmosphere are fruitful sources of infection, and injuries received under these circumstances are liable to be infected.

The Condition of the Patient Preceding the Injury.

The state of health, habits, and manner of life must be taken into account in the prognosis of injuries; and upon these to some extent depends the question of infection. The age is also important, for the healing process is established more slowly in the aged.

Any and all predisposing causes of inflammation, or any cause that would retard repair, would likewise favor the development of infection.

Pathogenic micro-organisms do find a nidus in eye lesions for their development in strong and healthy individuals, but if the vital powers are depressed by disease or exposure, the infection is rendered more probable.

The Condition of the Patient Immediately Following the Injury.

Pathogenic bacteria may find entrance to the tissues and the circulation through intact mucous membranes; but as a rule they are introduced through abrasions of the skin or mucous surfaces. If the infection-atrium consists of a wound of the cornea or conjunctiva from a retained foreign body, the symp-

toms of inflammation are soon developed. This may be due in part to the mechanical irritation as well. Again, if an injury of the eyes occurs under conditions of exhaustion or when the circulation is accelerated from active exercise, the infection is more probable.

Hence, in recent injuries of the eyes the question of infection in the prognosis may be to some extent determined by the location of the injury and the nature of the foreign body infecting it; the manner and circumstances under which the injury is received; the preceding condition and the subsequent condition, or the condition immediately following the injury.

DREAMS AS A PRECURSOR OF OPHTHALMIC MIGRAINE.*

BY CH. FÉRÉ.

DANTE says that sleep often discloses events before they have occurred. In the remotest times physicians accorded to dreams a considerable diagnostic and prognostic value. During sleep, when consciousness is suspended, the slightest internal irritation may awaken images more or less vivid, according to the irritability of the subject. And according to their duration or the frequency of their repetition such impressions can form pictures more or less complete and varied, sometimes stereotyped, sometimes changing, and capable of indicating a certain morbid state. The vividness of the picture has no relation whatever to the anatomical condition which gives it birth. The slightest irritation, however transitory, is capable of producing the clearest images, while a destructive and irreparable lesion may produce only a fleeting image leaving scarcely a trace in consciousness. It is rare that dreams give warning that is of any value in a morbid condition; more frequently they are the merest illusions. We may say in general, however, that although a dream is worth nothing as a basis for opinion it is a reason for investigation, and a reason the more imperative if it is repeated with regularity and exactness.

Dreams may sometimes be the first symptom of a visceral affection which has shown no other discoverable sign. They may be at once the initial manifestation and the morbid agent in a psychopathic state. In psychopathic conditions such as the neuroses, they may be the occasional manifestation pointing to a treatment that will arrest the progress of the disease. The subject is worthy of clinical study.

Among epileptics we sometimes observe that a dream of an attack, a sort of attack in miniature, is one of the premonitory

* From the *Révue de Médecine*, February, 1903, translated by BURTON HAS-ELTINE, M. D., Chicago.

symptoms of the actual seizure, and this is of service during treatment in presaging the attack.

It is not surprising, therefore, that cases of migraine, which is closely related to epilepsy, sometimes have dreams that are analogous. Like the epileptic attack, the attack of migraine may be announced by bad dreams and nightmares which disturb the sleep of the preceding night. This is a common relation between dreams and migraine. With some patients each attack is preceded by the same dream which may have no resemblance to the symptoms of the attack. This is also a common occurrence with epileptics. Furthermore, the migraine cases, like the epileptics, may have a warning long before the appearance of the attack, in the form of dreams suggesting the principal features of the seizure. The following cases are illustrative of these statements :

Case I.—Neuropathic antecedents, hereditary and personal. Unilateral visual images. Ophthalmic migraine. General paralysis.

N. P., aged forty-three, family gouty on father's side and neurotic on the mother's. Two children older than the patient had died in convulsions and he himself had had spasms during childhood. At the age of twenty, during the eruption of a wisdom tooth, he had had a convulsive attack with the cry, biting of the tongue, with micturition and stupor following. He had had syphilis at twenty-two, and had apparently been treated consecutively for five or six years. Since that time he had appeared well for a long period, indulging in frequent dietary and sexual excesses. He was forty-three when I first saw him and was suffering from ophthalmic migraine, which first came on every three months, but during the previous two weeks had recurred frequently, sometimes several times a day.

They consisted in a scintillation of multi-colored scotomata appearing abruptly as a bright spot toward the external part of the visual field to the right, extending rapidly, growing dimmer at the center, then re-extending, taking a polygonal form with oscillating wave-like movements from the center outward. After some minutes would appear an infra-orbital pain on the right side, lasting perhaps twenty minutes, followed by vomiting and an irresistible sleepiness. These attacks occurred at various times of day, but generally in the forenoon about nine o'clock. The patient could tell upon waking in the morning when he was about to have an attack; he would have dreamed of seeing fire in the night, usually about 3 or 4 o'clock a. m.

These apparitions appeared always from the right side in the form of a frightful tempest, a volcanic eruption, or a conflagration, passing away without a sense of noise or of odor. During several months before the appearance of the migraine he had been subject to the same dream at long intervals, but since he had suffered from the attacks the dreams had never occurred without being followed by the migraine the next day. Likewise the migraine had never occurred except when heralded by the phenomenon of dreams.

There were also present other symptoms heretofore unknown to the patient, such as the Argyll-Robertson pupil, loss of patellar reflexes, and the Romberg sign.

The attacks of migraine subsided rapidly as a result of anti-syphilitic treatment, the dreams, however, persisting for some time. Later they seemed to have disappeared or perhaps were masked by intellectual enfeeblement.

A general paralysis slowly developed in the form of a dementia, and death resulted at the end of three years, following a series of epileptic attacks.

Case II.—Neuropathic antecedents. Ophthalmic and paralytic migraine preceded by dreams.

Mlle. P., aged sixteen years, of nervous family; she had had convulsive attacks in infancy and was subject to migraine. Her mother had had several attacks of chorea at puberty and during two pregnancies.

Two children older than the patient had had convulsions. The patient herself had been exempt, but was subject to nocturnal terrors and to periods of sleep-walking which had persisted until puberty at thirteen years.

It was about this time that she had begun to be subject to dreams in the form of white phantoms. The apparition was that of a woman robed in white, appearing as through a veil and described as wonderfully beautiful; she appeared always from the right side, behaved as though performing some religious ceremony, and disappeared abruptly. These dreams occurred frequently and were the only manifestation during five or six months. Afterward other troubles developed, appearing only on the day following the occurrence of the dream; and thereafter the dream did not occur without subsequent attack.

Shortly after the completion of the morning toilet, at perhaps eight o'clock, a dark ball would appear in the right visual field of each eye. She would then experience a sensation of swelling, with tingling, in the fingers of the right hand, weak-

ness, and sometimes vomiting. The sensation would extend to the forearm, arm, and shoulder, then to the lower limb; exceptionally would occur movements of the head toward the left side. This paræsthesia remained constant for an hour or an hour and a half, disappearing abruptly along with the scotoma. Following this would appear a headache, severest in the right frontal region, but extending over the entire head even to the occiput. About the same time would begin a vomiting, always of a bilious character. The headache diminished after the vomiting, but persisted for several hours.

Two of these attacks occurred, presenting marked differences. One time the paræsthesia began in the right lower limb and subsequently extended to the upper. At another time the swelling and paralysis ceased for an interval to begin rapidly in the same order, involving the tongue and producing an aphasia before the appearance of the headache.

There were present no stigmata of hysteria; there was a marked deformity of the right side of the face and the patient wore a lens for the correction of a right-sided astigmatia.

Under the action of potassium bromide, four drams a day, the migraine rapidly disappeared and the white phantom appeared only at long intervals and when the patient was especially tired. She remarked also that the phantom appeared further away than it had before the appearance of the headaches.

The relationship between the dream and the migraine attack was the same in both of these cases. The dream preceded the migraine, was associated with and followed it, regardless of the diversity of ætiologic conditions. The dream was certainly a precursory symptom of the migraine, announcing beforehand the beginning of the neurosis and subsequently giving warning of each attack.

In the second case we can see in the persistence of the phantom an indication that the migraine is still present in a latent state. These hemianopsic dreams on the same side as the scotomata are worthy of consideration along with other hemianopsic hallucinations.

The relationship of such visions during sleep to the ophthalmic migraine would appear to indicate an analogy of physiological conditions between hallucinations and sensorial migraine.

AN INSTRUMENT FOR TESTING THE ACUTENESS OF HEARING.*

PERCY WILDE, M. D.

AT the present moment there is no instrument by which the acuteness of hearing can be accurately tested and recorded. It was because I was assured by an eminent aurist that such an instrument was badly needed, that I undertook the construction of this appliance.

I have divided a unit of sound into 240° , a degree being the smallest sound which it is possible for a person with acute hearing to distinguish. It follows, therefore, that the figure 240 which represents 1-240th part of a unit will signify acute hearing, and that any figure below that indicates a proportionate degree of diminished acuteness of hearing or deafness.

For the unit of sound I have taken that which is produced by the action of an induction coil upon a telephone. By causing the current to pass through a wire possessing great resistance to its passage, the sound is diminished in exact proportion to its length. By the side of this wire I have placed a scale, divided into 1-8th part of an inch. By means of an electrode, which I call the sounder, the actual length of wire which may be at any moment interposed between induction coil and the telephone can be exactly determined, and the act of placing the sounder at any point upon the scale produces the sound which is heard in the telephone, while the scale enables its exact intensity to be read off. All that is necessary, therefore, in testing the acuteness of the hearing is to ask the patient to put the telephone to his ear and run the sounder down the scale until the point is reached when the sound is no longer audible. To fix this accurately it is well to make separate contacts on the scale over a certain number of degrees and ask the patient to count aloud the sounds as they reach

* Exhibited and demonstrated February 5, 1903, to the Section of Surgery and Gynecology, British Homœopathic Society.

him. It is of course desirable that the patient should not be allowed to see the scale nor watch the hand of the operator. It is possible to fix the exact degree of hearing capacity in a very few minutes.

The principles which are involved in the construction of this apparatus are not novel, and I can see no reason why such an appliance should not have been used long ago as a test for the hearing capacity, except for one fatal objection to its employment. This objection consists in the fact that the induction coil produces a sound which is louder than that heard in the telephone. It is easy enough for the scientific observer to distinguish between the two sounds, but it would involve a great expenditure of time and worry to educate the ordinary patient to do the same. The whole utility of this apparatus depends upon the possibility of producing an induction coil which shall be practically noiseless. Efforts had been made by myself and others to get rid of the noise of the induction coil by putting it away in a padded box, but without any very satisfactory result. It was not until I had studied the cause of the sound and the mechanical principles involved that I saw a way out of the difficulty. The sound is produced by the steel band which supports the hammer, which is alternately attracted and repelled by the coil, and is thus maintained in a constant state of vibration. If this vibration is stopped, the action of the battery is also arrested. But it seemed to me possible that the necessary motion and vibration might take place and yet be performed silently. With this object in view I transferred the vibration to a spiral coil of wire, which is capable of the most violent and rapid vibration without producing any sound. In this way I produced for the first time an induction coil which worked practically without noise. This not only enabled me to render this instrument perfectly practical, but it will also make it possible to remove a nuisance which has hitherto been considered as inseparable from the use of induction coils.

[Since demonstrating the instrument, and in consequence of a suggestion from Mr. Dudley Wright that it was desirable to test "air conduction" as well as "bone conduction," Dr. Wilde has added a small microphone to it which enables both to be tested without any change in the arrangement of the instrument.]

SYMPOSIUM.

What success have you from changing prisms from time to time—and under what circumstances?

Of late years do you prescribe prisms for constant wear indefinitely as much as you used to?

FRANCIS B. KELLOGG.—I do not practice prismatic vacillation. Up to 4° I give prisms for working or constant wear, if they relieve, in low grades of heterophoria. In high grades I sometimes give them if patient declines a graduated tenotomy, but I always state that they are only a "crutch" and a poor one at that, while operation can be counted upon for much more radical and permanent relief. The disturbance caused by prisms above 4° is greater than the relief afforded.

CHARLES M. THOMAS.—I have for years rarely made use of prisms for constant wear, except in hyperphoria, which I correct, with much satisfaction, in this way up to 4° or 5° . I find quite often in these cases that the strength of the prism has to be increased after a time. Occasionally, in an exophoria, I have given relief by ordering prisms base in for *near work*.

GEORGE A. SHEPARD.—It is my custom to prescribe a prism for hyperphoria for constant wear. The strength at first corrects only a portion of the full amount, or what the patient accepts easily. Esophoria of low degree, when present both for near and distant vision, I correct with prism or decentering. My practice is much the same as in former years in the prescribing of prisms.

ROYAL S. COPELAND.—For a number of years I have not prescribed prisms for constant use, except in occasional cases of exophoria. I am more than ever convinced that the degree of heterophoria is inconstant, and that a single test or examination will often result in a wrong conclusion. The use of the prism crutch has been overdone, in my opinion, and in my own practice is largely discarded.

A. B. NORTON.—My rule has been, in prescribing prisms for constant use, to correct but from one-half to two-thirds of the heterophoria at first. I then frequently find that these prisms will have given relief for a longer or shorter period, when they will have to be changed usually for stronger ones, but occasionally the prisms can be removed or weaker ones prescribed.

My prescription of prisms is made, in the very large majority of cases, for hyperphoria or esophoria, and even in these cases I am ordering prisms not so frequently as formerly. In exophoria I prefer to correct the trouble by prism exercise.

Of course there are cases of all kinds of heterophoria where the amount increases by successive change of prisms and reaches the limit within which prisms can be worn with comfort; we then have to resort to operative treatment.

The greater my experience and study of the relation that exists between refraction and motility of the eye the less I have to resort to the use of either prism or knife.

SAYER HASBROUCK.—I have never been a great friend to the constant use of prisms in the past, but of late years I believe I have many times been pleased with the constant use of a prism that only apparently corrected half or two-thirds of the muscular trouble, measured by a red lens over one eye, correcting the diplopia thus caused with a prism. This method, I believe, more nearly corrects the insufficiency of everyday use or better indicates the real working insufficiency than Maddox', Stevens', or any other test, even though they may be more accurate at twenty feet than the mean fusion of the candle light. Theory is often good for making up a comparative series of cases for a scientific paper. At the same time we must not forget that our patients ask us to fit them for the everyday work of life, and that is what I try to do.

I do not believe that for everyday work a line and a candle [the Maddox test] tells the story half as well as two candle images, red and white, or two definite objects of any kind. Our patients work with both eyes open without the confusion of dissimilar images.

T. D. BROOKS.—I learned a better way, viz., developing the weak muscles by prism exercises, before setting up in this specialty, so have found no occasion to prescribe prisms for constant wear. My observation of the work of those who do prescribe them, and comparison of their results with those I secure, confirm me to my position.

THOMAS M. STEWART.—In muscular difficulties (latent squint) prisms are used one-half or one degree less than the patient can fuse. They are changed whenever the patient can fuse stronger prisms; sometimes the intervals are from a few days to a week. Sometimes latent squint can be brought out in two or three hours' séance at the office. In the course of the treatment we often find a gain in the acuteness of vision, together with lessening or a disappearance of the troublesome symptoms. The aim is not so much to secure perfect muscle balance, as it is to secure "comfortable vision."

In all that I have written along these lines I have tried to make it clear that I seldom prescribe prisms for constant use indefinitely. I do prescribe them for constant use for a few days or a week, and then I may change the strength of the prism and have the new ones worn for a few days or a week; this treatment may continue from six to ten weeks. After that I correct the refraction, but very seldom include a prism in that correction.

F. PARK LEWIS.—There are two conditions in which muscular imbalance is present: first, and most commonly, in uncomplicated ametropia; second, in eyes which are practically emmetropic. In either of these cases there may be disparity in the attachment or length of corresponding muscles, or there may be an insufficiency in the determination of energy to the muscles whose relationship and latent power are the same. When all refractive anomalies have been corrected the insufficiency on the part of one or more muscles may be as pronounced a source of discomfort as are focal differences when the relative attachments of muscles are symmetrical.

It is frequently possible by correct ocular orthopædics to direct energy toward the apparently weakened muscle.

This can be done by using continuously as spectacles, relatively weak prisms before the eyes with the apices toward the muscles of least apparent power and to which nervous energy is to be diverted. This method is commonly employed in developing what is termed latent heterophoria by reversing the process and directing the apex of the prism toward the apparently stronger muscle. If, for example, the seemingly stronger muscles in the internal rectus with manifest esophoria of two degrees, a one-degree prism before each eye with the apices in will shortly develop an esophoria of four degrees, and this being met in the same way a still larger amount will be evident.

If, on the other hand, the apices be directed to the externi or

weaker muscles, the esophoria will shortly be found to have disappeared, and with that will come an immediate sense of comfort.

It would seem that the application of this method is effective only in those cases in which the muscles are weak and not misplaced. If there is misplacement operative measures only will answer; but so difficult is it to determine which cases must necessarily be operated that it is safer to assume that all cases are susceptible of development unless it is obvious that this is not so. The same principles apply to the vertical as well as to the lateral muscles.

Prisms so prescribed may be worn for a longer or shorter time continually, and with or without the refractive correction as conditions demand, the muscular balance being carefully watched meantime. Relief is often immediate, and far more satisfactory results follow than by any other method of using prisms in my experience.

A full description of this method was given in an article by the writer in the *Ophthalmic Record* for February, 1901, entitled "A New Use of Prisms in Heterophoria."

PRACTICAL HINTS.

When exploring the brain—for abscess—use a grooved director; an aspirating needle might puncture an intra-cerebral vessel, whereas the former would slip by without lacerating it.

Give salicylate of soda 3x or 2x for auditory nerve vertigo: objects seem moving to the right; the giddiness, slight or indeterminate while lying still, is aggravated upon raising the head or sitting up; constant tinnitus; deafness, watch 2 inches a. u., no mastoid or zygoma or bone conduction, fork on vertex heard fairly well, but no louder by closing the ears.—SIR WM. GOWERS, v. *Am. Med. Mo.*, September, 1903, p. 97.

Quinine causes, and in decidedly smaller doses relieves, tinnitus with a sense of confusion.

In the mastoid operation a softening of bone at the root of the zygoma often needs attention.

A piece of sterile rubber tissue (button-holed) inserted first makes the primary gauze dressing more easily, painlessly, and safely removed and more comfortable to the patient.

Chronic ethmoid suppuration has proven, in at least two cases, to be the cause of aprosexia in adults.

Wick drains are better than gauze; the latter is more apt to become entangled by growing or swelling tissue, so that its removal causes more pain and rawness.

Simple saline infusion crenelates the red blood corpuscles; this may be avoided by adding sugar (in non-infectious cases): salt, one teaspoonful; sugar, two teaspoonfuls; water, one quart. The free [continuous?] saline irrigation of brain operations might therefore be improved by adding sugar as above. Infection contra-indicates it, from the fear that the sugar would prove a favorable culture medium.

The thyroid gland has been removed from the base of the tongue—according to Shurly—it having been mistaken for a lingual tonsil the size of a pigeon's egg.

The emissary vessels may be the medium of infection from the scalp to the cerebral circulation [in wounds or operations] and to the general system through the jugular veins.

SOCIETIES.

THE AMERICAN HOMŒOPATHIC OPHTHALMOLOGICAL, OTOLOGICAL, AND LARYNGOLOGICAL SOCIETY Sixteenth Annual Convention. June 20-25, 1903, in Boston, Mass. (Articles on Aural Diseases, reported by E. R. Johnson, Boston, Mass.)

Ossiculectomy for Chronic Suppurative Disease of the Ear.

ELMER JEFFERSON BISSELL, M. D., Rochester, N. Y.

The term "chronic suppuration" is too general; it is rather a symptom than the name of a disease. As nomenclature should be self-explanatory, the following is offered:

1. Simple Chronic Suppurative Tympanitis.
2. Chronic Suppurative Tubo-tympanitis.
3. Chronic Suppurative Epitympanitis.
4. Chronic Suppurative Mastoido-epitympanitis.

According to this classification, the author would, with rare exceptions, limit the sphere of ossiculectomy to the third group of cases.

There is much difficulty in some cases of chronic suppurative

epitympanitis of determining to what extent the mastoid is involved, and it is against these doubtful cases that the failures of ossiculectomy must be largely charged. Dr. Bissell advises treatment for a short time in order that the aurist may become familiar with all elements of the case and a differential diagnosis between chronic suppurative epitympanitis and mastoido-epitympanitis made. If this course is followed and ossiculectomy is done for chronic suppurative epitympanitis and the radical operation for mastoido-epitympanitis, very few failures will result.

Discussion.

F. W. COLBURN (Boston) agreed with the author of this paper that the nomenclature of the present was at fault and hoped to see some such change as Dr. Bissell had suggested. Ossiculectomy, he believed, was the best treatment of the third class of cases.

CHARLES H. HELFRICH (New York) thought the suggestion of the author to improve the nomenclature was a good one. Ossiculectomy is not always successful, therefore before commencing this operation permission to make a radical mastoid, if found necessary, should be obtained from the patient or friends.

HOWARD P. BELLOWS (Boston) congratulated the author upon his concise and splendid manner of handling the subject. The present nomenclature is lame and we should change it. Ossiculectomy should be put off until careful and persistent effort to cleanse and heal by present local methods has been tried. If with improvement in the appearance of the condition there is also improvement in h. d., the operation had better be postponed.

J. IVIMEY DOWLING (Albany) advised careful examination *Otosclerosis*—PERRY DICKIE (Brooklyn). The writer at once.

Otosclerosis—PERRY DICKIE (Brooklyn). The writer attributes this disease to uric acid toxæmia.

It is a new formation in the region of the oval window—an abnormal osseous growth in the labyrinth.

Treatment.—Remedy the uric acid condition. Hygienic and dietetic. Hydrastic, silica 6x; calc. ost. 6x; calc. fluor. vx; calc. phos. 3x; aur. mur. 2x.

Discussion.

GEO. H. RHOADES (Springfield, Mass.) did not agree with the writer that the cause of otosclerosis is the uric acid diathesis. Would not tell patient there is no help, for fear of the bad effect of such information upon a nervous and sensitive individual.

Tinnitus Aurium.—E. H. LINNELL (Norwich, Conn.). The character of the noise, its pitch, duration, location, and apparent direction may at times aid us in making a diagnosis. A fluttering sound, as of wings of insects, is suggestive of a spasm of the tensor tympani. A sound like a ticking or a grating may be caused by the movement of stiffened ossicles; cracking and crumpling sounds resulting from the agitation of a dry membrane, etc. Descriptions vary so much with the patient's command of language that they are not always reliable.

By far the most numerous cases of tinnitus are those associated with chronic catarrhal inflammation of the middle ear. The treatment of the subjective noises is essentially the treatment of the underlying morbid process.

The author believes massage contra-indicated when pronounced implication of the labyrinth exists.

Homœopathic remedies are of much value, especially if employed early. Indications based upon the peculiar character of the subjective sounds are unreliable. Undoubtedly treatment with the homœopathic remedy, combined with attention to nose and pharynx, inflation and massage skillfully and cautiously used, offer the best hope of success.

Artificial Membrana Tympani.—HERBERT D. SCHENCK (Brooklyn). The cotton pellet or a disk of sized paper will give the best results, in all except a few special cases. All depends upon the careful adjustment of the pellet, and this the patient can best do himself. Sometimes the pellet causes less irritation when moistened by liquid vaseline or one of the bland petroleum oils. The author believes that the pellet is not only of value in improving the hearing distance, but also as a protection to the mucous membrane. The paper disk is of greater value in some cases than the cotton pellet.

An artificial membrane should be tried in all cases where a perforation remains (except in Shrapnell's membrane) and where there is marked deafness on one or both sides, even if there be still a slight discharge. It is not uncommon to have

the hearing distance for the voice increased from three to four times.

Discussion.

JOSEPH M. PATTERSON (Kansas City). The paper disk is of especial value in cases of collapsed external canal. No case of deafness due to perforation should be dismissed until some sort of artificial drum has been tried.

HARRY G. WILLARD (Paterson, N. J.) prefers the cotton. An artificial drum may be of great value, but unfortunately these are chiefly in the hands of the manufacturers or charlatans. This ought not to be so, because of their absolute value in some cases.

W. A. PHILLIPS (Cleveland, O.) has used all kinds. Cotton is of the greatest value in the largest number of cases. The adjustment is the test of value. Patient can be taught to place it himself and adjust it better than the doctor.

H. P. BELLOWS cited the case of a grammar-school boy who had otitis media following scarlatina; the malleus and incus were destroyed. A cotton pellet was used, the boy adjusting it himself. This enabled him to complete his education, and he is now a successful business man. The form of pledget was made by taking cotton as large as a quarter of a dollar, turning in the edge and rolling between thumb and finger into the shape of a tack.

H. D. WEAVER (Philadelphia) uses oil silk cut the size of the membrane, threaded and placed in position by means of a quill.

Electricity in Diseases of the Ear.—CHARLES L. RUMSEY (Baltimore). The only definite results he can attribute to electricity in diseases of the ear are, first, in hysterical cases, second, Duels' gold wire electrodes for the Eustachian tubes.

For other diseases he has used electricity in combination, which of course precludes any exact valuation.

Discussion.

C. G. FELLOWS (Chicago) said the hypnotic influence of electricity in disease of the ear is of great value and should not be lost sight of. The negative pole in the ear is of the greater value. The galvanic is better than the faradic in middle ear affections. Catarrhal inflammation of the Eus-

tachian tubes can be greatly helped by electricity. The galvanic catheter without the bougie is as valuable as with it. The static machine is best for hypnotic effect.

The Use of the Rotary Masseur in Middle Ear Diseases.—J. H. BALL (Bay City, Mich.). The form of deafness which calls for massage is essentially one of disturbance in sound condition, and of catarrhal origin. The symptoms indicating massage are: loss of hearing, and tinnitus; vertigo may be present. A favorable symptom is that of hearing better or worse according as atmospheric changes take place.

The favorable case presents obstructed Eustachian tube, the membrane retracted but not fixed. The treatment is begun by relieving the obstructed tube, and then following with massage.

The Rotary Masseur devised by Dr. Howard Wilson was then described and a case cited.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL SOCIETY.—Ninth Annual Meeting, Lexington, Ky., April 30, May 1 and 2, 1893. (Concluded.)

Third Day.—Saturday, May 2.

The Eustachian Bougie; Its Use and Abuse.—DR. M. A. GOLDSTEIN, of St. Louis, read this paper. He said that in 1865 rubber had been substituted for catgut, and the bougie was passed entirely by the sense of touch. To-day, the celluloid, whalebone, or electrolytic cold bougie was employed. It was often impossible without a bougie to accurately determine to what extent the catarrhal process in the middle ear had progressed. With the bougie one was enabled to outline the entire track of the tubal canal, and by the educated tactile sense determine the exact location of any constriction of the tube, and even ascertain the character and consistency of the tubal stricture. He believed the bougie should be used as regularly in every case of otitis media chronica as ocular inspection of the membrana tympani and inflation. He had used the bougie liberally during the past ten years, and it had been his experience that the technique was not more objectionable to the average patient than the use of the catheter and inflation. He made use of the cold polished whalebone bougie in various sizes. By means of graduated olive-tips one could determine the caliber of the tube. As the normal average diameter of the isthmus tubii was 1 1-3 mm. it was not necessary to use a bougie of

larger caliber than that designated as a five-thirds bougie. When the catheter ring at the funnel end was moved perceptibly upward or downward during the passage of the bougie, it was evidence that the bougie was passing in the wrong direction. If the bougie were not in proper position deglutition would cause it to shift. If, on withdrawal, a decided kink was noted at the distal end of the bougie, it was an indication that the bougie was passing between the tip of the catheter and pharyngeal wall and had not entered the tubal canal. If the patient complained of a scratching or sticking in the pharynx, going more deeply as the bougie was pushed forward, it was evident that the bougie was not entering the canal. As the bougie passed the isthmus tubii the patient often complained of a sudden unpleasant sensation in the ear. Force should never be used in passing the bougie. If the tip of the instrument became engaged in one of the folds it was easy to produce a false passage if any force were employed. When such a break took place, a local emphysema was liable to be produced by subsequent inflation. The value of the use of the bougie was generally increased by immediate inflation of the tympanic cavity upon the withdrawal of the bougie, although in individual cases it caused increased discomfort. In such cases it should be omitted. The author was of the opinion that the bougie was of inestimable value, not only when there was a decided stricture of the tube, but when the caliber was diminished to less than 1 1-3 mm. The bougie here should be passed the full length of the Eustachian tube and left for a time varying from one to ten minutes. The first application was usually the most uncomfortable to the patient. The introduction of the bougie should be repeated every second or third day unless there was some unpleasant reaction, and the size of the bougie should be gradually increased up to No. 5. Perhaps the most frequent contra-indications to the use of the bougie were a feeling of fullness and dullness in the ear and an increase in the subjective symptoms. The period of treatment was not usually over six weeks. Marked improvement was sometimes noticed after the first or second passage of the bougie. He had found the bougie occasionally of value in chronic suppurative otitis media. It was reasonable to believe that the use of the Eustachian bougie would prove of value in cases of subacute catarrhal affections characterized by the presence of thick or stringy mucus. With regard to the use of the electroiytic bougie the speaker said that one of the advantages of this instru-

ment was the effect of galvanism, and another was the ease with which the instrument could be made to pass certain strictures which were impassable without such aid. He had used this bougie with from three to five milliamperes in 50 cases, and had obtained no better results than could be secured by the use of the ordinary whalebone bougie. Undoubtedly the instrument could be made to pass more easily, but there was apt to be a tendency for the stricture to return. The action of the current in such cases was not, in his opinion, true electrolysis, but rather a mild surface cauterization of the mucosa of the Eustachian tube.

The Possibilities and Limitations of the Electrolytic Bougie in the Treatment of Chronic Hypertrophic Catarrhal Deafness.—DR. ARTHUR B. DUEL, of New York, was the author of this paper, which, in his absence, was read by the Secretary. He had sent a circular letter to the members of the society asking for their experience with this mode of treatment. Of the 25 replies, two stated that the method had been found of no value; 17 were of the opinion that the tubes could be more quickly opened; 9 reported the breaking of the bougie in the tube. The replies seemed to indicate that there had been a lack of care in attending to the original source of the trouble, and a lack of judgment in the selection of the cases suitable for this treatment. Experience had shown that the tube could be opened more quickly and more permanently than by any other method. Injury to the chorda tympani nerve had occurred in 3 of his own cases, and so far as he knew in no others. The wires should be made with great care, and should be inspected each time before use. Many of the diverse criticisms were thought to be founded on purely theoretical considerations. The galvanic current exerted a powerful resorptive effect. The author said he had found it of the greatest value only when it had been used but a few times. Dobell's solution should be used to wash out the nose and nasopharynx, and again, cocainization of the parts should be resorted to before employing the electrolytic bougie. Bubbling sounds indicated that the bougie was rapidly passing through the stricture. Then the second or third obstruction would be encountered. The bougie should invariably be passed on into the tympanum. At intervals of a minute an additional milliampere of current might be turned on up to five minutes, and if then the obstruction could not be overcome, further treatment should be postponed for about one

week. Having passed into the tympanum, gentle inflation might be practiced at the end of two days. Sometimes the tube would be so blocked by swelling that inflation could not be practiced, and, of course, while this condition lasted, the patient's symptoms would all be aggravated. The author cautioned against using the method hurriedly and too often, and suggested that this treatment should not be taken up in connection with a busy practice unless special appointments were made with the patients. So confident was he of the benefit of the treatment that he would feel compelled to continue its use even though all the other members abandoned it.

DR. CHEVALIER JACKSON said that it was his opinion that the best method of treating the tube was by leaving it alone and treating the nose and nasopharynx. He had given the electrolytic bougie a faithful trial, and had found no greater relief than from other irritants, and no permanent benefit. The tube opened more quickly, it was true, but the final result was no better.

DR. GEORGE L. RICHARDS said he had practiced the method, and had encountered the breaking of the bougie, but had been unable to fairly understand the reason for the occurrence of this accident. In one case it was broken off at about 12 mm. The patient never knew of the accident, and it gave rise to no discomfort. In another case the bougie had been passed only once, and the result had been permanently good except that the tinnitus had not been improved. In another case the hearing became worse and the woman suffered from a paralysis of the tear canals on the corresponding side. The method was certainly one which called for careful selection and the use of plenty of time, at least an hour. Ordinarily he employed the treatment from five to ten minutes with 4 or 5 ma. and 30 volts.

DR. W. C. PHILLIPS said that for one year his clinic had been used for studying this method of treatment. The one case of mastoiditis reported had occurred in that service in spite of the employment of a very careful technique. However, he thought it could be positively asserted that there were certain cases of severe tinnitus which were caused by obstruction in the Eustachian tube. If the obstruction were mucus it would be temporary; if due to thickening of the membrane or a stricture it would be more permanent. If the obstruction could be overcome and air made to pass, it was probable that

the tinnitus would be relieved and that the deafness would not increase. He had used the electrolytic bougie on a large number of patients, and while Dr. Duel appeared to be rather enthusiastic on the method, it was capable of accomplishing very good results. He was of the opinion that temporary influence of the current enabled the operator to pass the stricture more easily than could be done without it; but that further than that the electricity was of no value. He commended the treatment solely for this aid given by the current. He had broken off one or two bougies in the tube while carefully demonstrating the method to the class. It should not be employed except by one having an excellent armamentarium and perfect control of the current.

DR. SARGENT F. SNOW, of Syracuse, said that he had had no experience with the electrolytic bougie. He had used the hard rubber bougie at one time, and believed its use favored absorption, but in recent years he had abandoned it because by other and simpler means he had secured equally good results. He rarely met with a case of chronic catarrh of the middle ear and Eustachian tube that was not due to more than one cause. Almost invariably there was a nasal factor, and it required removal. He seldom encountered a bad case of deafness unless there was in addition a systemic element. The electrolytic treatment was directed only against the obstruction of the Eustachian tube, and the other factors were ignored. Recent observations had convinced him that in auto-intoxication, chiefly from the intestinal tract, was to be found a very potent factor in chronic catarrhal deafness.

DR. W. L. BALLENGER, of Chicago, said that one should not overlook the difference between galvanism, electrolysis, and cauterization. By galvanism was meant that method of applying electricity so as not to result in an appreciable breaking down of the tissue. By electrolysis was meant that softening effect on tissue which resulted from the current but was not attended by sloughing or abrasion of tissue. By cauterization was meant a more powerful or concentrated effect of the galvanic current, characterized by sloughing or absolute and rapid destruction of tissue. Apparently Dr. Goldstein had confused these terms. In the method under discussion that strength of current should be employed which would produce only electrolysis. Dr. Phillips had declared his belief that the electrolytic effect lasted only during the passage of the current, but

this, in the opinion of the speaker, was an error. Certain of the tissues were broken down by electrolysis into their primitive elements, hydrogen gas being liberated at the negative pole. The effects of electrolysis lasted much longer than the passage of the current; probably they lasted for some hours longer because of the liberation of gases and other chemical products in the tissues. His experience had been that this method of treatment was not of great value, and he based this opinion largely upon the experience of surgeons with electrolysis in the treatment of urethral stricture. Some years ago the method was much in vogue, but at the present date it was but little employed except by those who made a specialty of electrotherapy. Genito-urinary surgeons in general were of the opinion that the method was not very reliable, and certainly in the Eustachian tube the conditions for its employment were much less favorable. If the current strength were slightly in excess irritation would result, with the throwing out of cells which would ultimately cause the formation of fibrous tissue and eventually render the condition of the tube worse than before. While, therefore, the method might be used in selected cases, particularly those which were hypertrophies rather than genuine strictures, the danger of the method in the hands of the average practitioner must be such that he would enter a protest against at least any enthusiasm regarding this treatment.

DR. DUNBAR ROY said that he had been using the electrolytic bougie about four years, and before that, and even up to the present time, he had used the whalebone bougie a great deal. The value of the latter was certainly very great, and it was capable of giving equally as good results in the same class of cases as the electrolytic bougie. The personal equation undoubtedly entered very largely into this question, the determining factor being largely one of delicacy of touch and skill in instrumentation. Dr. Goldstein had said that with the bougie he could obtain a good idea of the state of the mucosa in the Eustachian tube, but his own experience was that after the bougie passed the free end of the catheter leading into the Eustachian tube it was impossible to determine whether it was rubbing against the catheter or the mucosa. He did not think any living man could tell just when the end of the electrolytic bougie was going to pass into a fold of mucous membrane. He depended entirely upon inflation and auscultation for knowledge of the condition of the mucosa. Every catheter could not be made

to pass into the tube, and for that reason he always made use of a malleable silver catheter, which could be bent to fit any nasopharynx. Having determined the size of the nasopharynx, and the probable distance to the opening of the Eustachian tube, the catheter was bent so that it would just go into the tube. If the catheter were not passed directly into the tube, only a little air would pass into the tube. The end of the catheter must fit thoroughly into the end of the Eustachian tube. Regarding inflation after the use of the electrolytic or the ordinary bougie, he would say that he never inflated, because he had had one or two very severe cases of emphysema extending well down on to the neck.

DR. E. B. DENCH said that after a very large experience he could not say that in the majority of cases the electrolytic bougie presented any great advantage over the ordinary bougie. The manipulation with the electrolytic bougie, it was true, was a little easier. He could only recall one case in which the tube appeared to have remained more patent after the electrolytic than after the ordinary method. This was counterbalanced by another case in which, after repeated use of the electrolytic bougie, one treatment by the ordinary bougie gave a permanent result. He, therefore, looked upon the method as a valuable one, but not one which was going to prove curative in any large number of cases which could not be equally well treated by older methods. One great advantage of the simple bougie was that applications could be made directly to the Eustachian tube, and this was of value even after the electrolytic bougie had been used. His own plan was to make use of a cotton-tipped wire dipped in various medicaments. One excellent clinician claimed that he had found the electrolytic method particularly useful because he had met with many strictures at the mouth of the Eustachian tube, and these yielded very easily to the current. Dr. Dench added that he had shown this gentleman that by simply bendnig his bougie a little more he could pass it easily into the tube without any use of the current, and that by the aid of the latter he had succeeded simply because he had caught and passed through certain folds of mucous membrane at the orifice of the Eustachian tube.

DR. GOLDSTEIN, in closing, said that if the value of the electrolytic bougie was considered to be due to the galvanism, then it was only through its vasomotor action. It was quite probable that this action was valuable. But by the term electrolytic he understood destruction of tissue, either on the sur-

face or under the mucous membrane, and in either case it would result in evil. The question of whether the treatment involved the employment of galvanism or of electrolysis should be settled without delay. The relief of tinnitus, as has been said, was often very marked with the electrolytic bougie when it could not be obtained by the cold bougie, and this he explained by the effect of galvanic stimulation. It was well known that galvanism would relieve subjective symptoms whether used in the Eustachian tube or applied in some other manner to the nervous system of the ear. If the result were only temporary, as appeared from the discussion, then the cold bougie gave practically the same result as the electrolytic bougie. The majority of the strictures occurred at the isthmus tubii, and it was not improbable that the rugæ might be responsible, as Dr. Dench had suggested, for many of the brilliant results claimed for the electrolytic bougie. He had not observed any melting of the strictures from the use of the galvanic current in this way.

The Value of Exploratory Puncture of the Membrana Tympani.

DR. DUNBAR ROY, of Atlanta, read this paper, reporting the histories of two cases. The first case was that of a lady of forty, who had always been nervous, and had been treated previously for what had been diagnosed as "hysterical insanity." When seen by him she was fairly vigorous, and there was nothing abnormal in the nasopharynx. The right ear had normal hearing. The left drum appeared thickened and opaque. The Eustachian tube was open, and there was no mastoid tenderness. Bone conduction was much prolonged. She complained of much pain in the front of the ear. She was put upon increasing doses of iodide of potassium, iodine was used externally, and she was given galvanic treatment. The patient complained of such severe and persistent pain that, a few days later, the left drum membrane was punctured, and this gave vent to some glairy mucus, and gave decided relief. The following day a mucous polyp appeared at the opening, and was removed, and from that time on recovery of hearing and relief from pain were satisfactory. The case was narrated to emphasize the importance of a more general use of exploratory puncture of the drum membrane, a procedure which, if rightly performed, carried with it no risk. Many a mastoid abscess had been prevented by early incision of the drum membrane.

The second case was one of mastoid involvement following acute otitis media, and without the usual symptoms. The trou-

ble had suddenly begun four weeks previously with severe pain in the right ear, and in vertex and occipital region. There was no mastoid tenderness, and the drum membrane on the right side appeared perfectly normal and free from moisture or congestion. Nevertheless the membrane was freely punctured and there escaped a small quantity of blood and muco-pus, and accordingly an immediate mastoid operation was done. Considerable healthy bone was passed through, and only a drop of pus was found in the antrum. However, several of the cells were filled with pus, and all of the mastoid was removed to the tip. During the operation there was a profuse muco-purulent discharge from the auditory canal. The next day the patient was very comfortable, and he made an uninterrupted recovery. This case illustrated the value of exploratory puncture, particularly in view of the fact that none of the usual indications for this procedure were present.

DR M. A. GOLDSTEIN opened the discussion on the two preceding papers. He said that at the meeting of the Middle Section of this society, held last year, he had presented a paper on influenza otitis, and had discussed therein the value of a liberal incision of the membrana tympani in this type of case before there was even a bulging of this membrane. He had carried out this method in a number of cases with rather satisfactory results. In most of the cases the operation was done during the stage of congestion and while the membrane was retracted. The value of this incision he believed to be undoubted, as it not only gave relief but provided drainage.

DR. CLEMENT F. THEISEN said that he understood that exploratory puncture was done by Dr. Roy when there was simply a redness of the drum with bulging. There was no doubt that many cases could be aborted by such early incision, yet he believed that there was a certain danger in making this incision unless one was certain that there was fluid in the tympanic cavity which would probably become purulent. He based this opinion upon the great danger of introducing infection from without. In some of these cases the use of the aural bougies recommended by Dr. Richards would give relief and abort the case with less risk to the patient. In children, unless general anæsthesia were employed, the spear-shaped instrument was almost a necessity because of the rapidity of manipulation demanded.

DR. SNOW heartily commended Dr. Roy's paper and firmly believed that the general adoption of this method would greatly reduce the number of mastoid cases. He had never known puncture of the drum membrane to lead to any harm, if properly done. He had a case very similar to the last one reported by Dr. Roy. In that one there were symptoms pointing strongly to intracranial mischief, and he had advised immediate operation, but could not obtain consent at that time. The next day there was a rupture of the drum, a free discharge of serous fluid, and coincidentally all of the urgent symptoms disappeared. He was now using bromide of ethyl as the anæsthetic in connection with the opening of the drum membrane, and found it well suited to these cases.

DR ROY said he did not advocate puncture of the drum membrane simply for redness, but he intended to advocate incision of the membrane without waiting for bulging, provided there were symptoms pointing strongly to otitis.

Cases of Pyogenic Brain Diseases Associated with or Caused by Acute or Chronic Nasal Suppuration.—DR. THOMAS HUBBARD, of Toledo, presented this paper. The first case was one of ozæna with ulceration, osteo-sclerosis, leptomeningitis, and death. The patient was a man of twenty-one with chronic suppuration of the left ear for over ten years. He developed a meningitis of the subacute type with no unusual ear symptoms. He had been using instruments freely for the removal of crusts from the ear. Only a hasty autopsy was possible. This showed the meninges bathed in pus. There was no infection of the temporal region, but the evidence pointed to infection from the nares. The second case was one of suppurative mastoiditis with a cerebral abscess. The patient was a woman of twenty-five who had had earache for many years and had been in the habit of picking the nose with hairpins. She suffered excruciating occipital pain. The autopsy showed the under side of the frontal lobe thickened and adherent by organized plastic lymph. There was an abscess in the center of the frontal lobe. The patient died from morphine narcosis, but this was not unusual from morphine used in proper doses in such cases. The third case was one of ozæna with acute accessory sinus infection and fatal meningitis. The patient was a girl of sixteen. The autopsy showed a purulent meningitis, probably arising from the nares. The fourth case was one of chronic intermittent purulent catarrh with operations on the septum and

for adenoids. There was a latent empyema and a fatal meningitis. The patient was a girl of ten years. Commenting upon these cases the speaker said that he was convinced that ozæna was a very important factor in such cases, particularly where operations were called for. The prognosis must necessarily be bad. The nares and accessory sinuses should be studied quite as carefully as the temporal bone.

DR. W. C. PHILLIPS thought the author was to be congratulated on calling attention to such a very important subject, which was of interest not only to the otologist but to those who also treated diseases of the nose and throat. One should not lose sight of the fact that any condition of the nose and nasopharynx, accompanied by a constant flow into these cavities of infective material of any kind, rendered the ear peculiarly susceptible to a sudden invasion of the infectious process. The fact was well exemplified in the cases reported in this paper. A very common cause of acute mastoiditis was well known to be the grip infection, and this became seriously complicated in cases in which there was already no active or passive suppurative process going on in one of the accessory cavities.

DR. PRICE BROWN said that as most of these cases were connected with atrophic rhinitis or ozæna, the condition should receive particular attention. These cases were so exceedingly chronic, and were so little improved by treatment, that a practitioner was prone to forget the necessity of keeping the parts clean. If the parts were kept clean such serious results would be much less likely to happen; hence, the practical lesson to be learned from this paper was obvious, and should be impressed upon the minds of all.

DR. C. F. THEISEN said that this paper taught one very important lesson long ago brought out by Grunwald, *i. e.*, that an atrophic rhinitis was always secondary to a sinus suppuration.

DR. JAMES E. LOGAN, of Kansas City, asked if any special examination had been made of the sphenoidal body in the cases reported in the paper. He agreed with the previous speaker that the papers had brought out a very important point, *i. e.*, the involvement of the accessory sinuses in atrophic conditions. He felt satisfied that in the cases reported some involvement of the sphenoidal body was present. The pathology suggested by Fraenkel and others, *i. e.*, that a pathological con-

dition antedated a hypertrophy, was certainly not to be credited at the present day. Many suppurative conditions prone to involve the middle ear would be found to be antedated by a suppurative condition in the accessory sinuses.

DR. GOLDSTEIN said that the paper taught the absolute necessity of a very careful and minute examination of the nasal cavities and their accessory spaces for the association of a possible mastoid complication in these suppurative processes.

DR. HUBBARD, in closing, said that he had presented the subject in this light for the special reason emphasized in the paper. Three of the cases might have been reported merely as mastoid cases, but he had taken another point of view to bring out the necessity for studying the accessory sinuses to determine the prognosis in cases requiring mastoid operations. The pathology of ozæna did not seem to him of great importance in this connection. He would rather incline to the view that ozæna was an atrophic disturbance. He regretted that the autopsies could not be made more exhaustive.

Further Observations of Tic Dououreux and Cranial Neuralgia from Intranasal and Sinus Pressures.—DR. SARGENT F. SNOW, of Syracuse, presented this paper. He said that in the twenty cases he had observed and treated he had seen none which required excision of the nerve to obtain relief. Each one showed marked intracranial pressure or a collection in some of the accessory sinuses. The acute forms he had seen accompanied cold or sinus accumulations. The subacute form might present an equal degree of pain, but did not clear up with the removal of nasal obstruction. A pain shooting outward and upward pointed to involvement of the anterior ethmoid, while a pain radiating around the lower jaw was commonly relieved by opening the sphenoid. The author was of the opinion that at least 80 per cent. of these cases were dependent upon intracranial pressure.

DR. PRICE BROWN said, regarding the comparative frequency of tic dououreux arising from pressure within the nasal cavity, that when the pressing was circumscribed, as of the middle turbinal upon the septum, the pressure was apt to be very intense. Frequently there was enormous pressure produced by growths, as, for example, when the cavity was filled with polypi, without the causation of neuralgia. He had observed more pain from the pressure of the middle tur-

binal, but sometimes the enlargement was a compensation for the lower turbinal, and then there was not usually so much pain. In cases of pressure from antral abscess causing pain the latter was spasmodic and occurred occasionally, whereas the pain from septal pressure was always continuous.

Life Insurance and Diseases of the Ear.—DR. WENDELL C. PHILLIPS, of New York, presented a paper with this title. He said that he had originally intended to submit statistics from the medical examiners of the various life insurance companies, but the results of communications addressed to about thirty of these companies had been very disappointing, with regard to obtaining the desired statistics. It became apparent that whatever the rules of any company, the final action taken was not dependent upon any statistical data. The replies indicated that the companies were anxious to obtain such statistics. Regarding the penalization of applicants who had suffered from acute or chronic otitis media no very definite information could be obtained further than the existence of such penalization. Nearly all of the companies refused or postponed such applicants, while two or three companies accepted such applicants on an extra premium. One company had a substandard class in which they accepted applicants having ear discharges. Some of the companies accepted these applicants except when the discharge was bloody or gritty, pointing to involvement of the bone. The writer then said that Schwarze's statistics pointed to 13.05 per cent. of all cases of aural disease being of the chronic suppurative variety. In three of the large London Hospitals there were 8028 deaths, in 45 of which death was due to aural suppuration, giving one death to 128 from this cause. Randall out of 5000 aural cases reported 15 deaths due to aural suppuration, or one in every 133. In a period of eight years at the Manhattan Eye and Ear Hospital there were 64,858 aural cases, out of which there were 218 presenting serious intracranial complications. Statistics seemed to indicate that the dangerous consequences from suppurative disease of the ear were most frequent between the ages of twenty and thirty. The writer was of the opinion that continuous discharge with foul odor should be looked upon as evidence that the person was a bad life insurance risk. Large perforations and apparently free drainage, while militating somewhat in favor of the patient, should not be considered as a guarantee against the extension of the necrotic process. Radical operative interfer-

ence was destined to become an important factor from a life insurance standpoint.

DR. E. B. DENCH said that the paper was of special value, coming as it did from one having large experience in otology. The paper presented facts rather than opinions, so that discussion was not in order except as regards the conclusions. He had been surprised, with his increasing experience, to note how frequently a chronic purulent otitis with a large perforation would remain dormant for a period of from one to five years, and would then suddenly develop all of the symptoms of an acute otitis. Formerly he had been of the opinion that when there was a large perforation in the drum membrane and free drainage the patient was quite as free from danger as though there had been no suppuration; but he would change this opinion at the present time, and state his belief that while the person was comparatively safe, he was by no means entirely out of danger. He agreed with the reader of the paper that *probably* the radical operation would remove absolutely all menace to life, even though the discharge had not been absolutely controlled. However, cases of labyrinthian fistula should be excluded here.

DR. DUNBAR ROY said he had greatly enjoyed this paper, and believed it to be in the right direction, because otologists were consulted from time to time regarding applications for life insurance. It had always seemed to him that cases presenting distinct fetor were always severe ones, and could not be controlled except by the radical operation. He would give a fairly favorable prognosis as regards the insurance risk when there was no distinct odor.

DR. BALLENGER referred to a boy of about eight years on whom he had done a radical mastoid operation, and death had occurred six or seven years later from meningitis. It was one of his earliest operative cases, and it was possible that the operation had not been a complete one. He did not know positively that the meningitis was of otitic origin. While the presence of a fetid odor was not usually a favorable omen, he knew that the odor might be present in cases showing no dangerous element. Some years ago he had presented a paper on this subject, though not founded on such extensive statistics.

DR. SNOW expressed the opinion that when a competent otologist believed he had removed the cause of the ear disease

the life insurance companies should be more lenient towards such applicants. He believed that in not a few very serious and obstinate cases, presenting no history of syphilitic taint, a good result was only obtained after the free administration of iodide of potassium. A case in point was narrated.

DR. PHILLIPS, in closing the discussion, thanked Dr. Ballenger for having reported a fatal case after mastoid operation and supposed cure. The existence of a fetid odor was important because it indicated the presence of necrosis. This was an important subject because it made it possible for certain applicants for life insurance to be accepted if they submitted to the radical operation.

Teratoma of the Ear.—DR. WILLIAM C. BRAISLIN, of Brooklyn, sent a report of this case, which was read by the Secretary. The auditory canal was completely blocked by the tumor. A Wilde's incision was made and the entire ear was carried forward with the external auditory canal, and the tumor then removed. The tumor was attached to the periosteum of the bony canal, and was enclosed in a capsule. On gross section it appeared to be studded with particles of cartilage. Examination showed it to be a teratoma.

ABSTRACTS FROM CURRENT LITERATURE.

Report of a Case of Ethmoidal Frontal Sinusitis, and Antral Empyema, with Operation on Antrum and Middle Turbinated Body, followed by Death.—Geo. B. Rici, M. D.—*Annals of Otol., Rhin. and Lar.*, November.

A man thirty-one years of age, first seen July, 1902, giving symptoms of above combined empyema on the right side. Examination showed great polypoid hypertrophy of right middle turbinal. "Percussion demonstrated pain in the supra-orbital region, extending into the nasal, lachrymal, and malar bones." Umbra over right antrum and pus exuded from ostium maxillare of same side. On the 25th the right turbinal was removed, and Cooper's operation performed; large quantity of such foul pus came away that it was necessary to open the windows. The following day his temperature rose to 102°, pulse to 86, and severe pain developed in right side of

face. On 29th he became quite drowsy, but could be aroused with some effort, however the pupils were equally dilated and responded quickly to light. Apparent paralysis of left arm, and occasional convulsive twitching of facial muscles; face was flushed and a small amount of albumin in urine. No further symptoms developed, but patient died August 1, Autopsy refused. The author asks if the patient did not probably die of sepsis, not directly from the antral empyema or operation, but rather the cerebral complication of a possible perforation of the walls of the frontal or sphenoidal sinus, consequent upon the temporary obstruction of their outlets by the usual swelling following the removal of the middle turbinal. Also would not opening the frontal sinus have been advisable? A. W. P.

Hugh E. Jones' Landmark for the Facial Nerve.—
Jour. Lar., Rhin. and Otol., June, 1903.

In an interesting and timely communication, read at a recent meeting of the Otological Society of the United Kingdom, Mr. Hugh E. Jones described a landmark for guidance during the performance of the radical mastoid operation which, whether or not it be universally applicable, has at all events the merit of being readily available during the performance of the operation, and is therefore of the utmost practical value. It is familiar to all that the facial nerve is embedded to a certain extent in the lowest part of the innermost section of the posterior wall of the external auditory meatus, and it would therefore seem natural to suppose that the descending portion of the aqueduct of Fallopius ran downwards and outwards with a considerable amount of obliquity.

This, however, is more apparent than real and, in fact, the direction is almost absolutely vertical. (This is well shown in the article by A. M. Randall, of Philadelphia, published in *Arch. of Otol.* Vol. XXXII., No. 2. Prof. Schwartze (vide abstract in *Journal of Laryngology*, May, 1903, p. 227) gives his opinion that there is a certain possible variation between the extremes of verticality and obliquity; but this is not very considerable, and the apparent obliquity depends upon the position of the plane of the tympanic ring, which of course lies much deeper at its lower than at its upper part.

Mr. Hugh Jones points out that the part of the auditory canal in which the facial nerve is embedded is entirely internal to the highest part of the floor of the meatus, and below a line running from this upwards and inwards at right angles to the

plane of the tympanic ring. We may, therefore, chisel away with confidence all the posterior osseous wall lying external and superior to this line. Many important measurements have been made and published by observers of authority, but they are difficult of application during operation, and practical surgeons will value this readily employed landmark for which we are indebted to Mr. Hugh E. Jones. D. G.

The Treatment of Aural Exostoses.—H. O. Reik, Baltimore.—*Johns Hopkins Hosp. Bull.*, March–April, 1903.

Practically all of the text-books on otology unite in what is, for the present day, a false teaching—laying down the rule that an exostosis of the external auditory canal is not to be operated upon unless it is so completely blocking the canal that it prevents the exit of pus from a coexisting suppurative otitis media and thus endangers the life of the patient, or, unless because of its size it obstructs the entrance of sound waves and produces a profound deafness in a person who is also deaf on the other side from this or any other cause. The author of the chapter on Diseases of the Auricle, in the American Text-Book of Diseases of the Eye, Ear, Nose, and Throat, recommends the wider application of operative measures, while the writer of the chapter upon Operations upon the Ear reiterates the advice referred to above.

One can readily understand why Toynbee, Von Troeltsch, and the writers of that day (1849) should have taken the position they did against any operative measures. It is to be remembered that anæsthesia was unknown then and antisepsis was undreamed of.

“I have examined the records of 139 cases that have been operated upon and in no single instance did any serious complication result from or follow the operation.” In a large proportion of these cases a suppurative otitis media existed at the time of operation or had been present before, and the operation was done during a period of its quiescence. Every case is reported to have been cured, immediately or ultimately, both as to the removal of the obstruction and the relief of the otorrhœa or the deafness, whichever may have been the cause for intervention. Occasionally the operation was successfully performed after the pent-up secretions had started an active disturbance in the mastoid.

There have been a much larger number of cases operated upon than have been reported, for in some parts of the world,

particularly in England, it is a common affection. Undoubtedly, too, there have been a number of unpublished failures. "I think one is justified in taking issue with the text-book statements and in urging, as others have done before, surgical treatment of these growths without waiting for them to become particularly, and perhaps dangerously, troublesome." When done early the operation is much simpler and the operator has much better control of the field than when the canal is completely obstructed by the growth, and when otorrhœa exists its treatment is rendered more easy and its cure more certain and permanent by the prompt removal of the growth, even though there be a passage-way still sufficiently large to permit egress of the pus.

Discussion.

DR. RANDOLPH.—I think one of the reasons why otologists have generally refused to operate upon these growths is the intense reaction that may follow the operation, which is often very intense, no matter how perfect the technique of the operator, for it is a difficult place to secure satisfactory drainage, and this being the case nothing would be more likely than an infection of the middle ear from the canal. Of course where an obstruction to discharge is present the indications for operation are strong.

I would like to ask Dr. Reik what operation he prefers. I perforated the mass in my cases by the slow action of silver nitrate, and while the treatment consumed a good deal of time I was satisfied at getting the canal perfectly clear and that too without any discomfort or risk to the patient. At no time was there reaction of any moment and no closing of the canal by swelling. I am opposed to the use of other cauterizing agents than silver nitrate.

DR. REIK.—The patient Dr. Randolph inquired about, and upon whom I operated recently, serves as an excellent illustration of the point made in my paper, that it is important to remove these exostoses before they cause any pronounced trouble. At the time Dr. Randolph saw him he was troubled only by partial deafness and operation was not advised. A year later the patient came to me with a foul-smelling otorrhœa and other symptoms pointing to inflammation of the middle ear with commencing mastoid involvement. It was necessary to remove the obstruction at once to secure proper drainage of the tympanum, and this being done the otitis media was soon cured. Of course, one can operate upon such a case even after serious complications have arisen, but although he may be suc-

cessful in removing the growth and in checking or curing the inflammation, he can never thoroughly repair the damage done to the drum membrane and ossicles.

In regard to the method of operating, my own preference is for the chisel and mallet wherever possible; the dental drill may be serviceable in some cases. If the growth is large or situated deep in the osseous portion of the canal, the operation is rendered much easier by following Dr. Knapp's suggestion of detaching the auricle and drawing it forward, as in the mastoid operation, so as to expose the tumor at a much shorter distance from the operator. Having completed the removal of the exostosis the auricle is stitched back in place, an antiseptic dressing applied, the canal plugged with iodoform gauze and the patient kept quiet for a few days. This plan was followed in my case, the dressings in the canal being changed frequently on account of the otorrhœa, and the patient sent home well at the end of a week.

J. L. M.

Eye Symptoms in Arterio-Sclerosis.—J. Cameron Connell, Kingston.—*Can. Pract.*, September.

Changes in the retinal vessels as a result of arterio-sclerosis are seen with comparative infrequency, though they are not so rare as was formerly supposed. Raehlman found visible changes in twenty-four out of forty-four cases of arterio-sclerosis. Disturbance of function is not always present, and, in the absence of the subjective eye symptoms, no doubt many cases escape observation.

The changes to be seen by the ophthalmoscope are: (1) Pulsation of arteries and veins; (2) tortuosity and attenuation of the vessels; (3) white streaks along the margins of the larger vessels; (4) hæmorrhages; (5) rarely, a beaded appearance of the smaller vessels, due to the formation of small aneurisms.

It may be very difficult to differentiate the third symptom from the somewhat similar appearances which follow neuro-retinitis; but in the latter condition the caliber of the vessel is not usually constricted as it is in arterio-sclerosis.

Consequent upon the alterations in the arteries and upon the hæmorrhages are fatty degeneration of nerve fibers, infiltration with round cells, and separation of the fibers by hyaline fibroid material. This explains the loss of vision.

Several cases in elderly people have come under notice in which small sub-conjunctival hæmorrhages, developing without apparent cause, have been the immediate reason for the consultation. The conjunctival lesion appeared trifling, but examin-

ation of the fundus showed an advanced arterio-sclerosis. One of these patients died suddenly, while taking a cold bath.

The recognition of arterio-sclerosis of the retina is of value, as it indicates similar disease of the cerebral vessels. This indication may be regarded as positive even when the vessels of the general circulation are apparently unaffected.

To the oculist the information is important, as it affects the indications for treatment of concurrent eye lesions and the prognosis in operations.

Epistaxis in old people, without apparent cause, must be regarded as a symptom of incipient arterio-sclerosis, *i. e.*, it occurs in the pre-sclerotic stage when the only recognizable symptom may be the heightened arterial pressure. Later on the attacks diminish in frequency, when there is lowered blood pressure and lessened cardiac activity.

J. L. M.

Amblyopia ex Anopsia.—Lodato.—*Annali di Ottalmologia*, December, 1902.

He proved its existence by suturing together the lids of one eye of a puppy shortly after birth and after several months opened the palpebral fissure. The eye was very amblyopic, pupil reactions imperfect, and there was poor development all through the nervous connections, especially marked in the visual cortex.—*Treatment*, May, 1903.

On Treatment of Syphilitic Disease of the Mucous Membrane of the Mouth and Throat—Anton Lieven, Aix-la-Chapelle.—*Jour. Lar., Rhin. and Otol.*, May, 1903.

Secondary and tertiary forms only will be considered, the irritative (or secondary) and gummatous (or tertiary) lesions. Three medicaments are useful, mercury, sarsaparilla, and iodine.

Mercury, three methods: per orem, injection, and inunction. The first, or internal, as recommended in England, is least active,—this is not as rapid or energetic as the latter two.

Injection. Preferably use:

℞. Hydrarg. succinimidatum. 0.15
Cocain hydrochlorate 0.05 to .075
Ag. dest. steril. ad 10.00
Sig. 1 c. c. m. to be injected daily.

or every second day. Objects to the sublimate because even with common salt added it causes unbearable pain in some patients.

Of the insoluble salts hydrargyrum salicylicum 1 to 9 in paraffin, Sig. half a Pravaz syringe full twice a week for eight or ten weeks, is best. Care must be taken not to inject in large vein; to avoid this introduce the needle unattached to syringe; if no venous blood flows it is not in a vein. But "most serious disadvantage of insoluble salt is that the deposits sometimes lie unchanged in muscles for a long time, then suddenly swamp the whole system." Thus exactness of dose, which is claimed, is not real. Even soluble salts, as they combine with albumin, act similarly. "In this way gray oil and calomel are specially dangerous, and have even caused death."

Inunction. Author's practice is "every morning the patient takes a thermal bath (at Aix-la-Chapelle) using soap only to that part of body which is to be used for inunction that day, but not disturbing last inunctions, and after the bath no rubbing down is allowed. The openings of the follicles where previous inunctions have been applied are now seen to be deep black in color, a clear sign that the bath does not remove the mercury. Thirty to sixty minutes after the bath inunction is carried out, the process lasting some twenty minutes." Active metabolism is important, therefore patients drink and bathe in thermal water (containing high percentage of salt), and take active bodily exercise. Full diet, plenty of milk and good ventilation necessary. After such a course mercury can frequently be found in urine for five months. On appearance of secondary symptoms give course of forty-two inunctions, then for year and a half a similar course every six months, but if no symptoms appear the fourth or last of the above courses is not taken until twelve months after the third. In second year, after each course KI. is given up to 60 grams. If symptoms appear in intervals of inunctions he gives:

R.	Hydrarg. tannic, or Hydrarg. oxydulat. tannic.....	0.6
	Ext. opii.....	0.3
	Pulv. et succ. liquiritiæ q. s. ut ft. pil.	60.0
	Sig. One pill t. i. d. after meals.	

Neisser's method is not commendable. In this the patient remains in closed room after inunction in order to absorb by respiration the mercurial fumes given off from the body. Mental depression and neurasthenia are natural results.

Nelander's method is simply painting the body with mercury and remaining in room like Neisser's.

Iodine is merely an absorbefacient and does not kill the syphilitic bacillus. It is chiefly useful for gummata and in

secondary stage to relieve pains in head and bones, and in all stages cures "syphilitic fever."

When papules frequently recur, use following:

R. Alumin. acetico-tartaricum (German Phar.).....	32.0
Thymol	0.05
Spirit.....	
Glycerini....	aa 50.0
Ol. menth. pip....	gtt. xx
Ag. flor. aurant.....	ad 200.0
Sig. Teasp. to tumbler, mouth wash, every half hour.	

Is also excellent preventive of stomatitis mercurialis. At same time cauterize plaques with 60 to 90 per cent. sol. chromic acid, or still better, on top of chromic acid paint nitrate of silver. The latter combination is especially for rhagades and fissure-like papules.

In tertiary conditions commence with iodides 3, 8, or 10 grams per diem; if KI. produces iodism, try iodide of soda, if this not well borne use KI. in enema.

As soon as gummata disappear return to inunctions. In "syphilis maligna præcox" commence with large doses of KI.; mercury usually does no good. Occasionally remarkable conditions suddenly supervene, all infiltrations break down,—stop the iodide and the breaking down ceases,—renew, and the breaking down renews. In these cases use the mercurial injections. Occasionally gummata need locally the combined ac. chrom. and silver nitrate. Pharyngeal ulcers may need scraping and application of tinct. iodii. For pain dust with anæsthesin, which on ulcerated surface acts for two or three days.

As substitutes for KI. iodalbacid or iodipin may be employed, they do not produce iodism as soon, but neither is as rapid or energetic as KI. Iodalbacid is useful after inunction cure, two 1-2-gram tablets t. i. d. for two days, the rest on the third. Iodipin by injection subcutaneously 15 to 200 grams per diem, after which iodine is found in urine anywhere from 14 days to 4 months. A 25 per cent. solution best form for administration.

Sarsaparilla. Not infrequently in recurring gummata of mucosa and bones, even after thorough mercurial treatment this will help,—thus in cicatricial contractions of larynx often beneficial. Prof. Kobert's formula of sarsaparilla made by apothecary Hirsh produces least bad effects of any.

A. W. P.

Laryngeal Paralysis as a Primary Symptom of Tabes Dorsalis, with report of Cases.—L. B. Lockard, Denver, Col.—*Annals of Otol., Rhin. and Lar.*, March, 1903.

In a hundred well-marked cases of tabes, Semon found fourteen in which there was laryngeal paralysis, and of one hundred and twenty-two cases, Gerhardt seventeen. Grouped according to the lesions discovered, we find: Unilateral posticus paralysis, 14; bilateral posticus paralysis, 8; unilateral recurrent paralysis, 5; bilateral recurrent paralysis, 1.

Later Semon reported a case of bilateral recurrent paralysis. The author reports four cases of unilateral posticus paralysis. From study of these he makes the following deductions: (1) Laryngeal paralysis as a complication of tabes is present in about 15 per cent. of all cases. (2) Paralysis may precede all other symptoms by from six months to three years. (3) This primary paralysis is always limited to the posticus muscle and is usually, if not invariably, unilateral. (4) The process usually remains limited to this muscle for years or during the life of the individual. (5) This primary paralysis is fairly common; the true percentage will never be ascertained owing to the long absence of subjective symptoms. (6) When the cause of an abductor paralysis cannot be accurately ascertained, locomotor ataxia must be considered. (7) That it is frequently of great diagnostic importance, in that it will draw attention to the general condition and thus sometimes uncover an unsuspected ataxia. (8) In all cases where the diagnosis of tabes is doubtful, a laryngeal examination should be made whether or not there be subjective laryngeal symptoms. A. W. P.

BOOK REVIEWS.

LESSONS ON THE EYE FOR THE USE OF UNDERGRADUATE STUDENTS. By FRANK L. HENDERSON, M. D., Ophthalmic Surgeon to St. Mary's Infirmary and the Christian Orphans' Home; Consulting Oculist to the St. Louis City Hospital, the Wabash Railway, and the Terminal Railway Association, Member of the American Medical Association, Missouri State Medical Association, St. Louis Medical Society; Trustee of the St. Louis Medical Library Association. Third Edition, pp. 205. P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia, 1903.

Twenty-seven chapters—lessons—for the student in general medicine. Our author claims originality only in his omissions,

leaving the rest for post-graduate study, and slighting those diseases which have to be diagnosed with the ophthalmoscope, but not ignoring them.

We are glad he exerts his influence toward the correct application of the terms *nyctalopia* and *hemeralopia*, but miss their derivation. The old confusion in these terms would never have arisen had their derivation been borne in mind and our teachers and writers taken care always to be accurate. The syllable *al* stands for the Greek *alaos*, blind, as the *nyct* means night, from *nux*, and *hemer* day, from *emera*. We are talking of an eye blind at night, not of a night eye.

It is hoped that in the next edition Dr. Henderson will emphasize the caution [which he has omitted] that infection can be carried on a stick of alum and even by one of lunar caustic.

J. L. M.

CONSTITUTIONAL THERAPEUTICS. "The patient, not the disease." By A. W. WOODWARD, M. D., for twenty-five years a teacher of *Materia Medica* and *Clinical Therapeutics* in the Chicago Homœopathic College. 557 pages. Linen, \$3.50. Postage, 25 cents. Boericke & Tafel, Philadelphia, 1903.

A very suggestive, helpful book, of value to every student of *materia medica* and *therapeutics*, notwithstanding two serious criticisms.

1. The clinical cases instead of being demonstrations that the relief is undoubtedly attributable to the remedy are, as is too often the case, assertions whose value depends upon our confidence in the reporter.

2. It is assumed that a drug acted in the sequence in which its effects are given in summary.

The book is an effort to show the sequence of drug action and the group of physiological derangements produced by our remedies; an interesting table classifies and groups the drugs and at the same time individualizes them.

"The individuality of a drug means those characteristics of its action upon the healthy subject which distinguish it from every other remedy. It means a train of physiological disturbances which is alike in the majority of provers, and, later, a group of physiological derangements corresponding thereto which is peculiar to itself." "The fact that the same disease shows a different line of development in different cases is one that has not received the attention that it deserves, for scientifically this variation is fundamental to an understanding of each case and

governs its subsequent course. The initial symptoms and method of development determine the individuality of each case."

We heartily commend a careful study of this book; of course it must be supplemented by the *materia medica*. If medicinal therapeutics consisted solely in the application of the above mentioned table the practice of medicine would be a comparatively simple matter.

J. L. M.

THE LATIN GRAMMAR OF PHARMACY AND MEDICINE. By D. H. ROBINSON, Ph. D., late Dean of School of Arts and Professor of Latin Language and Literature, University of Kansas; with an Introduction by L. E. SAYRE, Ph. M., Professor of Pharmacy in, and Dean of, Department of Pharmacy, University of Kansas. Fourth Edition, with elaborate vocabularies, thoroughly revised by HANNAH OLIVER, A. M., Assistant Professor of Latin, School of Pharmacy, University of Kansas. P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia, 1903. Pp. 273. Cloth, \$1.50 net.

Years ago we knew a physician who told his would-be medical student that a preliminary knowledge of Latin was unessential, but soon saw his mistake, not having realized the great influence upon himself of his own early thorough grounding in that language. Despite this requirement now for admission to our best medical schools there are still, and will doubtless be for years to come, many practitioners who feel this deficiency in their education.

This clearly arranged handy volume, the first Latin grammar ever written expressly for medical students, with its two indices, sixty-eight pages of Latin-English and English-Latin vocabulary, four of pharmaceutical and medical terms, suggestive derivations, explanation of the English pronunciation—although the continental is preferred—indication of the long vowels and special exercises in reading and writing prescriptions, should enable a man with some study to avoid betraying ignorance.

We say "should"; some have found it difficult to remember the final vowel in *post-mortem* and in *post-partum*, *tinnitus aurium*, etc.; *partus* is omitted from the vocabulary, and *post* from the list of prepositions—a practical and important shortcoming; *post-partum* is not mentioned, directly or indirectly, anywhere in the book. However, this will undoubtedly be recti-

fied in the next edition, in which especial attention should be given to the rules governing the spelling of such medical terms. We recommend every medical college (that has not already done so) to suggest this book to those who need to get up Latin for entrance.

J. L. M.

TEXT-BOOK OF DISEASES OF THE EYE, for Students and Practitioners of Medicine. By HOWARD F. HANSELL, A. M., M. D., Clinical Professor of Ophthalmology, Jefferson Medical College; Professor of Diseases of the Eye, Philadelphia Polyclinic; Ophthalmologist, Philadelphia Hospital; Consulting Ophthalmologist, Chester County Hospital, and WILLIAM M. SWEET, M. D., Demonstrator of Ophthalmology, Assistant Ophthalmic Surgeon, Jefferson Medical College; Assistant Ophthalmologist, Philadelphia Hospital; Associate in Ophthalmology, Philadelphia Polyclinic; Consulting Ophthalmologist, Phoenixville Hospital. With chapters by CHRISTIAN R. HOLMES, M. D.; CASEY A. WOOD, M. D., D. C. L.; WENDELL REBER, M. D. Pp. 532. 256 illustrations, including colored plates. P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia, 1903. Cloth, \$4.00.

A clearly written, really too concise, quite up-to-date work. From its description skiascopy would be very simple and easy if something had been said about the degree of illumination and the size of its source, and the use of a mydriatic.

Our authors inexcusably add to the confusion too prevalent about hemeralopia. As teachers it was, and is, their duty to set right the use and understanding of the terms hemeralopia and nyctalopia; an easy task, especially with the aid of Dorland's American Medical Dictionary. Even Gould's name cannot excuse their remarkable footnote on page 367: "Gould thinks the word hemeralopia, literally day-vision or night-blindness, should be abolished from medical literature. It is used indefinitely to express day-blindness, night-blindness, amblyopia, and photophobia." Upon what excuse do they say that hemeralopia is literally day-vision? The Greek *hemera* means day, but the rest of the word is derived from *alaos*, which means blindness, and *ops*, the eye or vision. In like manner nyctalopia comes from *nux*, night. It is very poor teaching that does not give the student a clear conception of the differences between day-blindness, photophobia, night-blindness, and amblyopia.

J. L. M.

THE JOURNAL OF OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY.

EDITOR,
JOHN L. MOFFAT, M. D.

ASSOCIATE EDITOR,
A. W. PALMER, M. D.

EDITORIAL.

WITH this number comes to a close the third volume under the present editorship, and we seize the occasion to thank each and every one who has helped make the JOURNAL interesting and valuable.

Our Associate, Dr. A. Worrall Palmer, in addition to his work in the nose, throat, and ear, has been particularly active in securing reports of societies.

To Doctors Harry Zeckhausen, Warren U. Reynolds, Frederick E. Rabe, Virgil C. Piatti, and E. Rodney Fiske, of our collaborators, our readers are indebted for translations of valuable papers from the Russian, German, Italian, and French; while collaborators Royal S. Copeland, Burton Haseltine, J. Martine Kershaw, J. M. Patterson, and David A. Strickler have strengthened the JOURNAL by their contributions and sympathy in our aims.

OCULAR ANALGESICS.*

DAVID W. WELLS, M. D.,

Boston.

THE problem of pain has been discussed from time immemorial, by both the theologians and the biologists. It is hard to conceive of a sentience capable of pleasure that is not in equal degree susceptible to pain. From the evolutionary standpoint pain is a necessary evil. Pleasurable sensations cause one to repeat the actions by which they are produced, while painful results teach one what to avoid. Pain is also a valuable aid to diagnosis: If it follows close application of the eyes, experience has taught us to expect eye strain. Just how a refractive or muscular error gives rise to pain in different parts of the head is not thoroughly understood. The frowning and scowling so frequently associated with defective sight are evidence of an attempt to overcome the defect by an abnormal contraction of the occipito-frontalis, orbicularis, and corrugator supercilii. This useless tension probably causes pain in the muscles involved. Pain in the occipital portion would seem to indicate that in some individuals this tension extends to both parts of the muscle. The common complaint of a "feeling of sticks in the eyes" is indicative of a congestion of the conjunctival vessels which act like rubber tubes, and when distended become hard and rub the eye. The congestion may not be apparent at the time of the examination, but if the sensation follow application to near work, one is justified in assuming its existence and in attributing it to eye strain. Permanent relief of such cases is only to be obtained by correction of the refractive or muscular defect. My subject naturally relates to pathological conditions, but functional causes are often difficult to exclude. Right here idiosyncrasy plays an important rôle, and the possibility of a hypersensitiveness must be considered. In

* Read before the Mass. Hom. Medical Society, October 7, 1903.

selecting the indicated remedy the location, character, and aggravations of the pain are indispensable data, as most of our symptomatology is subjective. When our remedies have been proved by Dr. Bellows' plan, there will be less need of using this confessedly fallible means of drug selection.

After making the diagnosis and selecting the remedy, whether it be homœopathic or empirical, unless relief speedily follows the patient demands something to ease the pain. It has certainly served all useful purposes, and the physician's skill will be respected just in proportion to his ability to meet this issue. This must be done without aggravating the disease, and with the least possible disturbance to the patient. It is not the intention of this paper to deal with general anæsthesia and anodynes per stomach, rectum, or hypodermic. Fortunately these are seldom required. Heat and cold are the readiest local means that suggest themselves. Pledgets of absorbent cotton saturated with water, either as cold as ice or as hot as can be borne, furnish an easy method of application. Both extremes tend to reduce the congestion. *Warm* water, on the other hand, tends to increase the caliber of the capillaries.

We have become so familiar with the anæsthetic properties of hydrochlorate of cocain, that we are apt to fail to appreciate sufficiently this great boon. It is to the oculist what general anæsthesia is to the surgeon. In the comparatively simple operation of removing foreign bodies from the cornea it is of inestimable value. A recent experience in an emergency case in the backwoods, with no cocain obtainable, has revived my appreciation. What a relief it is to be able to tell a cataract patient that the operation is practically painless. In inflammatory conditions cocain is very ineffective, but if the congestion can be overcome with adrenalin, an anæsthesia is obtained which may persist for half an hour. Therefore cocain as an analgesic has decided limitations, but lends itself very happily to combinations with styptics. Cocain dries the cornea, and if used too frequently tends to desiccate the corneal epithelium. This can be largely obviated by observing the precaution of having the lids closed for some minutes after each application. The photophobia associated with so many ocular lesions renders an examination of the eye well-nigh impossible. Here cocain renders signal service. A 2 per cent. solution suffices for most cases. Adrenalin alone must be classed as an analgesic in those cases in which irritation is due to the congestion of conjunctival vessels.

Holocain possesses some advantages over cocain, in that it can be boiled without deteriorating it. Its anæsthetic properties are about the same as cocain, but it causes no mydriasis. This peculiarity is sometimes useful in cataract extraction. I have used it 1 per cent.

Eucain β has similar properties. It is less toxic than cocain, but this element need give one little concern if solutions are freshly prepared.

I seldom use either of these, being well satisfied with cocain in superficial conditions. Cocain is useless in deep-seated lesions like iritis, cyclitis, and episcleritis. It is positively contra-indicated in glaucoma on account of its mydriatic effect, except it be combined in small amount (one-tenth of one per cent.) with eserin to allay the local irritation of the latter.

The ciliary body is the vital part of the working eye. Besides being very vascular it has a rich nerve supply. The lenticular ganglion is composed of a motor root from the motor oculi nerve, a sensory root from the ophthalmic portion of the trigeminus,, and a sympathetic branch from the cavernous sinus. This aggregation of nerve energy is utilized wholly in the short ciliary nerve which, after being joined by the long ciliaries from the nasal branch of the ophthalmic, pierce the globe and pass forward to the ciliary body and iris. Thus it may be seen why inflammation of this region causes such intense pain and disturbance of the sympathetic system. It is also apparent why the paralysis of this muscle by atropia or some other cycloplegic is one of the most efficient means of affording relief.

Darier of Paris has recently called attention to the analgesic properties of dionin in these affections, giving a series of cases in which its efficacy is evident. Dionin is the hydrochlorid of ethyl morphin. In general practice it has found considerable favor as a substitute for morphia sulph. "because it never gives rise to any unpleasant symptoms." I have had the pleasure of verifying Darier's claims in several cases of iritis and irido-cyclitis, under conditions which leave no doubt in my mind that the analgesia was due to dionin.

My first case was a former patient who presented himself on my return from a vacation. A few days previous he had had an attack of what a colleague had pronounced iritis. A good mydriasis had been secured, but he had passed several sleepless nights and immediately asked to be put in a hospital, affirming that he could not stand the pain. After cocainizing I instilled two drops of a 5 per cent. solution of dionin, repeat-

ing the dose in five minutes. In fifteen minutes the pain was gone. I had the patient wait an hour or more, and as there was no return of pain I ordered a collyrium of atropin and 5 per cent. dionin, two drops three times a day, and sent him home comparatively happy. He made a good recovery and there was no more suffering.

Case 2 waked in the morning with severe pain in the left eye; felt as if something was in it; darting pains through orbit and left side of head, the paroxysms recurring at frequent intervals. Careful examination of cornea, cul-de-sac, and fundus under cocain revealed nothing abnormal. I went out to lunch leaving patient, who was temporarily relieved, in my reception room. Upon my return in half an hour, I found her in the office, saying she could not stay with the other patients on account of the severity of pain. A pink crescent was now apparent around the inner margin of the cornea. Instillations of atropin and dionin were immediately made, but before any mydriasis was evident the pain had ceased. I ordered atropin with dionin 5 per cent., t. i. d. Patient returned in three days, having had no more pain. The use of atropin in this case weakens the evidence for dionin, as the paralysis of the ciliary muscle, which atropin induces, makes it a true analgesic in cyclitis. Nevertheless I feel confident that the dionin was the effective agent, as there ensued the characteristic reaction of the drug.

In using dionin, it is well to precede it with cocain, as considerable smarting is occasioned at first. The patient should be made to look strongly upward, the lower lid held down, away from the globe, and one or two drops put in the lower cul-de-sac. If this position is maintained for a minute or two, the drug is absorbed by the conjunctiva and very little comes in contact with the cornea. Applied in this way the smarting is not worse than cocain, and lasts only a few minutes. Then follows an œdema of the conjunctiva which progresses to a veritable chemosis. The analgesic effect is in direct proportion to this chemosis. It has been suggested that this lymphagogue action reduces the compression on the sensory nerves.

Case 3 is interesting in this connection. Patient first seen August 15, with a history of recurrent attacks of iritis for ten years. There was a diffuse deposit in the cornea and I decided the process was an active one, as there was considerable photophobia. Dionin relieved this latter symptom and a collyrium of cyanide of mercury 1:1000 with the dionin 5 per cent.

was ordered t. i. d. There was very little if any chemosis, and as the conjunctiva is probably adherent to the sclera from the repeated inflammatory attacks, there is some doubt about the possibility of its production. The patient was comfortable for three weeks, using the dionin t. i. d., when there followed an attack of irido-cyclitis with considerable conjunctival hyperæmia; pain and photophobia had been excessive for twelve hours when I called. Adrenalin and atropin gave complete relief in less than half an hour. I regret that I did not use a subconjunctival injection of dionin, which Darier recommends in violent cases. In extenuation of this failure, it should be noted that dionin had been used t. i. d. for three weeks, and it has been observed that an immunity is oftener acquired after repeated dosing; moreover, the characteristic chemosis was wanting.

Case 4 should, I think, be diagnosed as panophthalmitis. The cornea was ruptured by a blow from a stick of wood twelve years previously. A leucoma occupies nearly the whole cornea with the iris entangled. After remaining quiescent all this time, it suddenly became very much inflamed and painful. I advised immediate enucleation, but consented to wait a few days to see if treatment would relieve. Dionin 5 per cent. produced no chemosis and no relief of pain, which was secured with atropin and adrenalin. Still under treatment.

Case 5. Deep scleritis with involvement of cornea. Pain and photophobia entirely relieved with dionin 5 per cent.; the chemosis was marked. Still under treatment.

To sum up the five cases: three showed chemosis and entire relief of pain, two no chemosis and only partial amelioration. I have not tried dionin in a case of painful glaucoma, but it is claimed that it works well with eserine. Its value here will be greater than in iritis, as atropin cannot be used.

Another analgesic for which we are indebted to Darier is acain. I will not attempt to give its chemical name. It has a limited sphere of action, the analgesic property is evident only when there is some break in the continuity of the surface. For abrasions of the cornea, herpes, and chemical burns it is said to be most efficient. This I have not had opportunity to verify. Its principal value is in subconjunctival injections.

This has long been recognized as a most effective method of combating a local disease focus, but my previous experiences gave rise to such intense pain that I had decided to reserve this as a last resort. It seems to matter little in the production of pain whether the fluid be normal saline or cyanide of mercury,

and the addition of cocain affords only temporary relief. By adding half a gram of 1 per cent. acoin to a gram of cyanide of mercury 1:1000, I have injected under the conjunctiva five to ten drops, and the only pain was a slight sensation of the prick of the needle. There was no after pain, only a sense of fullness. The possibility of making these injections painless opens up a new field of therapeutic possibilities, concerning which we may reasonably expect encouraging reports. The relief of pain is not the cure of the disease, but while we are striving to establish a therapeutic science it is no mean accomplishment to make the patient comfortable.

THE MECHANISM OF ACCOMMODATION IN MAN.*

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THE question as to the mechanism of accommodation received its scientific answer some fifty years ago, and in such a manner that it seemed to have been settled finally. The changes during accommodation of the size of the reflex images formed by the anterior surface of the lens were first observed in 1849 by Max Langenbeck, and soon discovered again and carefully investigated in 1851 and 1852 by Cramer, and published by him in 1853. In the following year, 1854, Helmholtz, who had been unacquainted with Cramer's Dutch publication, the German translation of which appeared in 1855, published the result of his researches in Graefe's *Archives of Ophthalmology*, which had just commenced its career a few months previously. According to his theory the accommodation was mainly if not solely due to an increase in the spherical curvature of the anterior surface of the lens. This increase was due to the relaxation of the zonula, and the latter was produced by the contraction of the ciliary muscle, or, as it was then called, "tensor choroideæ."

This view was generally accepted until, in 1858, Mannhardt by a study of the comparative anatomy of the ciliary muscle came to the conclusion that the accommodation by increased curvature of the anterior surface of the lens was produced by the traction (and contraction) of the ciliary muscle. This view was little accepted, and was seriously supported only by Schoen, who ever since has adhered to it. He found a very valiant supporter in Tscherning, who in the *Archives de Physiologie* of 1894 and 1895 adopted Schoen's views. Tscherning corroborated what Cramer, and—fifty years before him—Thomas Young had observed, that the anterior surface of the lens does not retain during accommodation its spherical shape, but changes into a hyperboloid, the center becoming more curved and the periphery more flattened than before. These

* From *Brit. Med. Jour.*, September 26, 1903.

changes are attributed by him to the increased tension of the zonula as the result of the contraction of the ciliary muscle. With regard to the alteration of the anterior surface of the lens he says: "My investigations show that the essential phenomenon in the accommodation of the eye consists in the flattening of the peripheral portion of the anterior lens surface; it is this flattening which indirectly produces the increase of curvature in the central portion, and thereby as its result the increase of refraction. This flattening thus being a phenomenon of the first importance for the study of the mechanism of the eye, it becomes desirable to study it as closely as possible, the more so as in my opinion it is the weightiest argument against the acceptance of the theory of Helmholtz."

The two theories are then briefly these:

(a) The increased curvature of the lens during accommodation is produced by relaxation of the zonula due to contraction of the ciliary muscle.

(b) The increased curvature of the lens during accommodation is produced by tension of the zonula due to contraction of the ciliary muscle.

The former view (a) is called the Helmholtz theory, the latter view (b), though identical with Mannhardt's and Schoen's, we will call for our purposes the Tscherning theory.

A formidable attack was made in 1896 by C. Hess, who in an able paper brought at one blow the weight of important new observations to bear against Tscherning's view. Since then the discussions of the International Ophthalmological Congress at Utrecht, 1899, and at the International Medical Congress at Paris, 1900, have left the balance in favor of the Helmholtz view, in spite of the heated attempts of Schoen, Tscherning, and others to get the victory on their side. I had not taken a very ardent interest in the controversy when I was induced nearly a year ago to approach the subject. I can only say I have entered the discussion in a perfectly unbiassed spirit. My object has been to ascertain facts—undoubted, unassailable facts—and to bring new evidence. Having obtained this, the facts would have to be placed and interpreted, irrespective of any preconceived idea or theory. It was perfectly indifferent to me which way the result would turn. The objective facts would have to be accounted for.

In the autumn of last year a young man came to me to consult me about his eyes. Twenty-six years of age, of middle stature, well-formed, except for a scar on the right upper lip (due to

an accident), healthy in appearance. A casual glance shows rather dark eyes of otherwise normal size, on closer inspection the iris cannot be seen. No photophobia, no unusual expression or behavior in daylight. Examination in the dark room reveals: Cornea normal in size and transparency; iris both in right and left eye completely absent. Right eye: Lens of normal transparency except for a very small anterior and still smaller posterior polar cataract. Left eye the same as right; however, both anterior and posterior cataracts are still smaller than the corresponding opacities in the right eye. These four opacities are very shallow and are situated within and in contact with the capsule. In the fundus of the right eye, near the equator, there is a slightly yellow, discolored, longish patch noticeable in the retina, otherwise the fundus shows no abnormalities. Refraction: Hypermetropia and vertical corneal astigmatism of 2D. S. R. = 1-6 with $+ 6.0 \subset + 2.0 \phi$ S. L. — 1-6 with $+ 7.0 \subset + 2.0 \phi$. For near distance he sees Jaeger 5 with difficulty; he is not a good scholar. Both the focal and the ophthalmoscopic illuminations are borne as easily and as well as daylight; no sign of photophobia. On looking into the fundus in the direction of the visual axis the lens practically fills the corneal area; when looking in an oblique direction the free margin of the lens becomes easily visible. Following it all round it is found that the equatorial margin of the lens is quite free from contact with any portion of the ciliary body, of which in fact no trace can be detected.

In case the patient should not present himself for any later careful examination he was shown at the Liverpool Medical Institution on November 6, 1902. The only point raised on that occasion was that in the few known cases of congenital aniridia glaucoma was almost always present. This was not so in this case, and I drew attention to the fact that we had in this instance one of the rarest and most noteworthy combinations of occurrences, and if there should be a sufficient amount of accommodation at all—not necessarily so in congenital aniridia—an investigation of the mechanism of accommodation should be made.

And the accommodation was present. Here was given the most exceptional concurrence of favorable conditions:

- a. Normal size of cornea, lens, and eyeball.
- b. Transparency of cornea, aqueous, vitreous.
- c. Transparency of lens, except for a very fine mark—a regular "chalk mark"—of the anterior and posterior pole.

d. A sufficiently good visual acuity.

e. Absence of photophobia.

When asked to look at an object held within 8 inches from the eye the existence of accommodation seemed to be very doubtful at first. Though the ophthalmoscope seemed to show an increase of about 1 to 2 dioptics no trace of any ciliary processes could be detected anywhere. The zonula fibers were noticeable all round, although only faintly.

Eserin was then instilled, and soon the picture changed.

1. When examined with the plane mirror, the lens, hitherto quite homogeneously red, appeared divided into three concentric zones. The central part 4 1-2 mm. in diameter shows except for the point-shaped polar opacity, the clear red of the fundus. Round this an incomplete ring (2 mm. broad) of a horseshoe-shaped shadow shifts round with the movements of the mirror, and can thereby be completed into a ring-shaped shadow zone. This in its turn is again surrounded by a clear zone of about 1 mm., reaching to the extreme edge of the lens (Fig. 1). The ring-shaped shadow zone is the expression of a

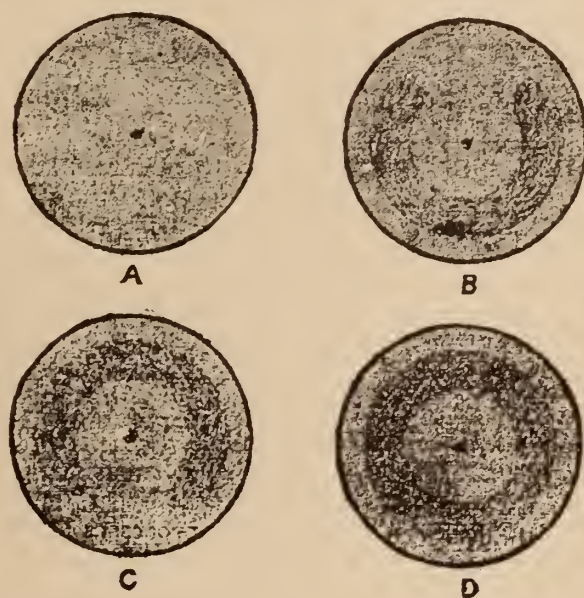


FIG. 1.—Shadow test with plane mirror ; the dark spot in the center represents the anterior polar cataract. A, without eserin; B, C, D, with eserin.

difference of refraction that has taken place between the central and the more peripheral portion of the lens ; it is the indication that the surface of the lens has changed its spherical form into that of a lenticonus (an anterior one, at any rate), such as has been observed by Cramer and proved by Tscherning.

2. The second, and perhaps most striking, feature is, how-

ever, the tremor of the lens. This does not occur at once, but only after five or ten minutes have elapsed after the first instillation of eserine. When any jerky movements of the eyes are made, vertical or lateral, the lens shows a most marked tremor of about two or even four small but distinct vibrations. This can be seen to perfection as well by reflected as by transmitted light, thanks to the polar chalk marks on the lenses. When not under the influence of eserine not a trace of this tremor can be seen, not even during the highest exertion of voluntary accommodation.

(Tremor of the lens proves, as has been pointed out by Hess, that the pressure in front and behind the lens must be the same during the height of accommodation, otherwise tension of the zonula would take place, and the lens could not vibrate loosely in its suspension as it does. With regard to this point more accurate knowledge is required than we at present possess, and the results of the investigations in this direction will be published in due course.

In the first volume of the large handbook of Graefe-Saemisch, Merkel (*Makroskopische Anatomie des Auges*, i, p. 38), in speaking of the lens, says: "The vitreous adheres so closely to the posterior surface of the lens that in quite fresh eyes a separation is impossible there, so that it first requires maceration before lens and vitreous can be separated." Tscherning (*Compt. Rend. Cong. Intern. d'Ophthal. d'Utrecht*, Amsterdam, 1900, p. 252): "Mr. Hess, who supports the Helmholtz theory, supposes that the lens sinks downward in consequence of the slackening of the zonula. But not only does the Helmholtz theory seem to me to have to be given up for other reasons, but it also appears difficult to imagine that the lens could sink at all, considering the manner in which it is fixed on the vitreous, unless the anterior part of the vitreous takes part in the movement."

Now, Merkel and Tscherning must clearly be wrong. It does not appear impossible to me that the pressure of the vitreous is not borne by the zonula. What part the hyaloid plays in this respect has never been investigated, but we know that when the lens with its capsule undamaged is removed from its normal position, either luxated or extracted, the vitreous does often remain in its normal place. Only to-day have we seen Major Smith's dazzling array of some thousands of lenses in the intact capsule extracted in India, and I am sure that even if he did not say so, we should not believe that Major Smith would

have extracted all these lenses within the capsule if a prolapse of vitreous had been forthcoming in many of them. Our knowledge in this direction very urgently requires improvement.)

This practically agrees with the observations made by Hess.

3. The ciliary processes become visible. Not very much, but distinctly visible all round the circumference, and it is almost easier to see them under focal illumination, where they stand out from the aphakic (extralenticular) portion of the red fundus, than with the help of the ophthalmoscope (Fig. 2). As far as can be ascertained, they have made a centripetal



FIG. 2.—A, without eserine, no ciliary processes; B, with eserine, ciliary processes. The two black spots represent anterior and posterior polar cataract respectively.

movement towards the visual axis, and do not appear to have moved forward towards the cornea. There remains a distinct interval between the ciliary processes and the lens everywhere.

4. The circumference of the lens at its equator remains perfectly circular, but decreases considerably.

I have taken a large number of measurements of the equatorial diameter of the lenses with a little apparatus which I constructed for the purpose. A microscopically accurate measurement is impossible, but here we fortunately have to deal with such comparatively speaking large measurements that we need not mind errors of 1-4 to 1-3 mm.

These are the average measurements equal for both eyes: The equatorial diameter without any drug, 11 1-2 mm.; with homatropin, 12 1-4 mm.; with eserine, 10 1-4 mm.

Here, then, we have a difference; a decrease of the equatorial diameter of 2 mm. between the homatropin and the eserine effects. (It must be borne in mind that we have to deal with a high degree of hypermetropia. The homatropin was a 1 per cent. solution, given only very sparingly, as the patient did not like these applications of eserine or homatropin at all. It is

therefore quite possible that under the effect of a fairly strong solution of atropin a still greater difference might have been found. But as all these measurements took a great deal of time for their careful carrying out, and had to be often repeated for

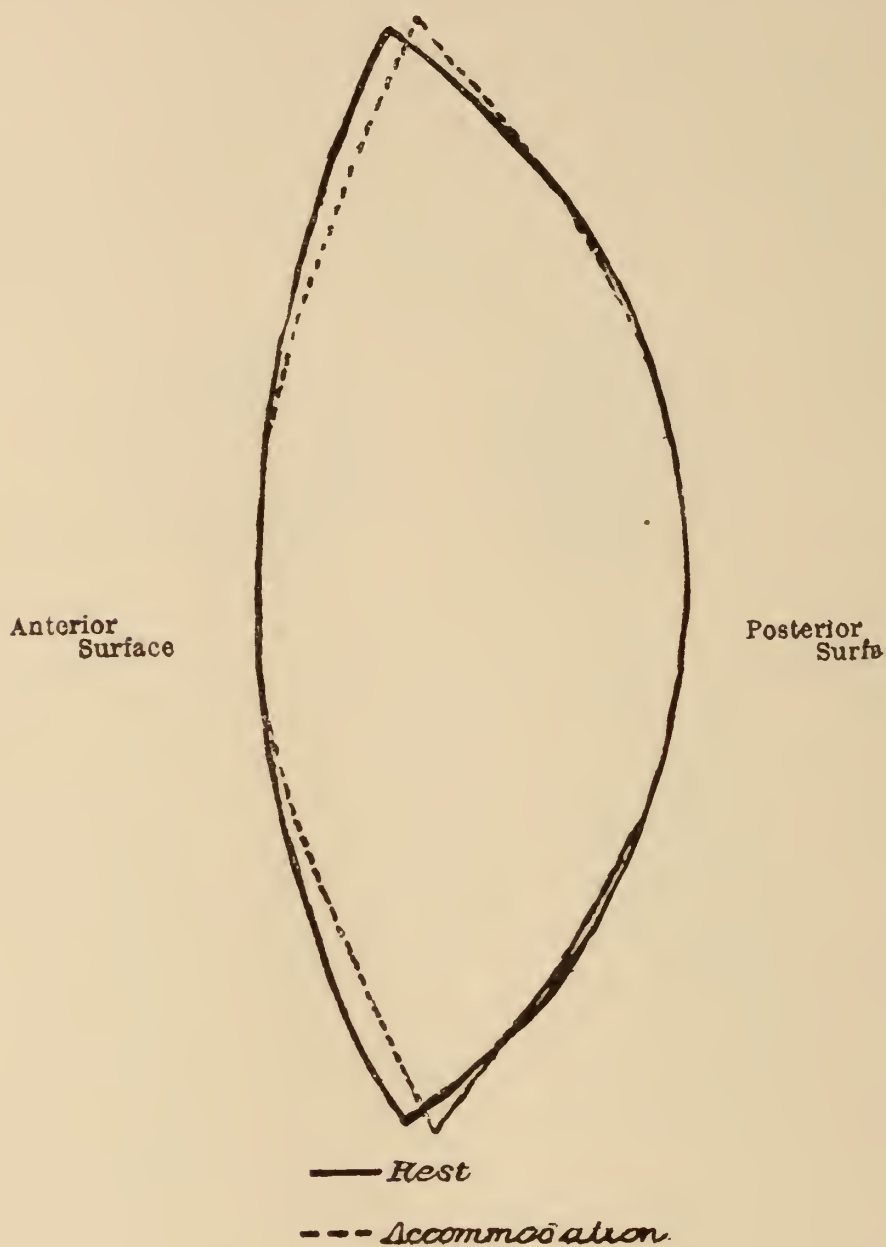


Fig. 8

verification, I had to be satisfied without going to extremes, especially as all the results were unmistakably clear and unequivocal.)

The equatorial diameter of the lens decreases during accommodation. In Fig. 8 Tscherning (*Annales de la Policlinique de Paris*, July, 1895, and also in *Optique Physiologique*, 1898, p.

164) represents the lens in rest and in accommodation. It is seen there that the equatorial diameter is larger in accommodation than in rest, as it would have to be according to his theory. We have seen that both his fact and theory are wrong. In 1867 A. Coccius published a paper in Leipzig on the mechanism of accommodation of the human eye, in which he mentions that during accommodation he observed in iridectomized eyes an apparent diminution of the diameter of the lens. Tscherning, on page 171 of his *Optique Physiologique*, remarks in reference to these observations: "Les phénomènes observés par Coccius sont probablement dus à une illusion d'optique." My own observations have vindicated the correctness of those of Coccius, and *vice versa*.

This decrease of the equatorial diameter of the lens during accommodation, as observed and measured here for the first time, is a fundamental fact of the first importance. Quite alone, by itself, without any other corroborating facts, it suffices to demolish the theory of Mannhardt, Schoen, and Tscherning,

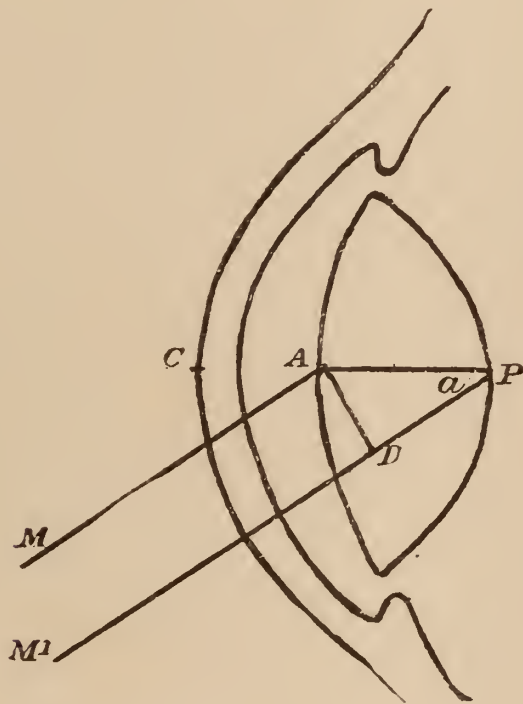


Fig. 3.

that the ciliary muscle by its contraction during accommodation exerts a pulling, stretching effect on the equator of the lens (through increased tension of the zonula).

5. If the circumference of the lens at the equator decreased,

it was to be presumed that its thickness—the antero-posterior diameter—should increase accordingly, the lens being composed of a practically incompressible material.

Direct measurements, hitherto impossible, were carried out in this instance. They were not easy and required a great deal of patience and time, but they gave clear and decisive results. Fig. 3 explains the method adopted by showing a meridional section of the eye. A represents the anterior, P the posterior pole of the lens, C the apex of the cornea. It should be remembered that in A and in P were the welcome point-shaped cataract spots which could be used as marks of the anterior and posterior capsule. A microscope of low power was focussed, first on to A and then to P, while the eye and the stand of the microscope were kept in the same relative position. The mark at A being larger than at P, the measurement could not be taken in the direction A P, as A would have covered P, obstructing the view of P altogether. A direction was therefore chosen, oblique enough to avoid the obstruction of P by A. The microscope M was first focussed on A in the direction of M A, and then on P in the direction of M P, which was in reality the identical direction without any lateral displacement of the microscope, A and P being in the same field of the microscope. The difference between the two focussing distances gave D P; and this gave $A P = \frac{D P}{\cos \alpha}$ being the angle A P D, which was measured for each experiment especially. Owing to the patient's disinclination for atropin and homatropin, the measurements were taken only for the state of the lens (a) without any drug, and (b) with eserine. The average of all these measurements, which showed only very slight differences, gave the result that the thickness of the lens, its antero-posterior diameter, was for distance without any mydriatic 3.14 mm., with eserine 4.44 mm. showing a difference of 1.3 mm. If we consider that the eye examined was highly hypermetropic and that of a youthful individual, we may safely assume that the difference would have been still greater if atropin had been employed; but even without any mydriatic we have here established for the first time, and proved irrefutably that the thickness of the lens increases during accommodation.

With regard to the increased thickening, Helmholtz, in the second edition of the *Physiologische Optik*, p. 134, says: "According to our observations, the anterior surface of the lens

advances while the posterior surface remains in its place; the lens must, therefore, increase in thickness during accommodation. And as it cannot alter its volume we are driven to the conclusion that the diameters of its equatorial plane decrease." This conclusion—though not a *priori* cogent—I have been able to prove to be correct.

6. After having found that the thickness of the lens increases so considerably during accommodation, it became desirable to examine the relative position of lens and cornea in rest and in accommodation. This was done in a manner similar to the preceding measurements described under No. 5. The distance between c and A was measured by the same microscope; c was marked by small specks of dust, and of A the first focusable plane was taken. In this instance, however, the direction c A could be adhered to, and no angular measurements were needed. It was found that the distance from the anterior surface of the cornea to the anterior pole of the lens was in rest, 3 mm.; with eserine 2.1-2 mm. The distance between lens and cornea decreases, therefore, during accommodation.

In spite of this advance of the anterior surface of the lens the lens itself does not move forward. The advance of the anterior surface is 0.5 mm.; the thickness increases 1.3 mm.; the posterior surface therefore recedes 0.8 mm., so that the lens itself either remains in its position or more probably moves slightly backwards. It certainly does not move forward.

(Already in 1841 Hueck (*Die Bewegung der Krystallinse*, Leipzig) had observed that during accommodation the anterior surface of the lens advances a little.)

7. We have seen under No. 3 that under the effect of eserine the lens becomes tremulous. This striking feature was first observed and correctly interpreted by Hess as the expression of the slackening of the zonula. Hess found that at the height of accommodation (in some instances without, but more generally with eserine) the lens suddenly descends a little, and when the accommodation is relaxed, it rises equally suddenly back into its original position. This movement is a downward one, due to the effect of gravity; the lens sinks by its own weight. In order to prove this, Hess put his head on the right side when the right lens descended towards the right temple; on the left side when the right lens descended towards the nose; forehead downwards when the lens went towards the forehead, always moving towards the lowest point. When the face was placed horizontally either downwards or upwards the lens did

not move at all. Tscherning gives two very good illustrations but no explanation, and appears loath to accept the irrefutable conclusions of Hess.

In view of these opinions it was particularly interesting to see how the lenses of our patient behaved. As has been already stated under No. 3, the tremor at the height of the action of eserine was very striking. But on further investigation something else became more striking still, and that was a displacement of the lens upwards and inwards. Whereas the ophthalmoscope before the application of eserine gave the appearance of (Fig. 4*a*) (right eye), the application of eserine changed the picture to Fig. 4*b*. In the left eye an analogous

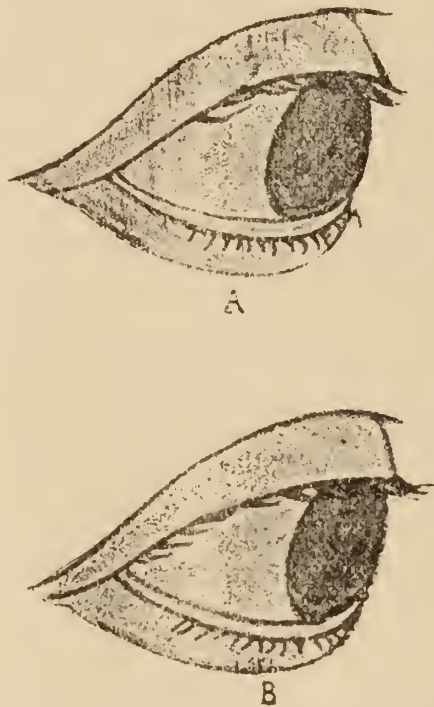


FIG. 4.—A, without eserine; B, with eserine.

symmetrical movement upwards and inwards was found. This upward movement counteracts and exceeds the slight downward movement of the lens that takes place due to its own gravity in the erect position, where it would have to be subtracted, while it would have to be added if the head were held downwards. Remarkable as this upward and inward movement of the lens is, it is not surprising that it has never been observed before. It is the result of the asymmetry of the eye, and one of the proofs—if such were needed—that in the present instance we have to deal with a perfectly normal accommodation, where only one part of the apparatus, and that a quite un-

important one for the mechanism, though not for the optical result, is missing—namely, the iris.

Since first making this observation I have examined thousands of irides, and found in the overwhelming majority of cases that the pupil during contraction moves noticeably inwards and upwards, less frequently inwards and downwards or simply inwards. This at the same time explains why Hess and his friends found, in the entoptic examination of their individual "lens spectra," that only a downward movement of the lens took place; the pupil and the pupillary margin to which the entoptic movement was correlated had already made a movement in the same direction, and practically together with the lens itself, a movement which therefore became unrecognizable for subjective entoptic observations. From the movement of the lenses in our case we may say with absolute certainty that, had the irides been present and of normal size and function, the pupils would also have moved upwards and inwards.

This point is of such interest and involves such important questions connected with the symmetry of the dioptric apparatus that it will be gone into more carefully in a special paper.

8. The changes of the curvature of the surfaces of the lens have been examined by means of the Sanson-Purkinje reflex images. Helmholtz and his school used two points as source of light. Tscherning, by using three points arranged in a straight line, was thereby enabled to demonstrate that in accommodation the anterior lens surface increases in curvature in the center and decreases in curvature towards the periphery. Fig 5 is a reproduction of Tscherning's Fig. 4 from his article on the Theory of the Optical Changes in the Eye during Accommodation, in *Archives de Physiologie*, January, 1895. The limits of examining these images were very narrow owing to the fact that with increasing accommodation the size of the pupil narrows, and the iris accordingly covers more and more the peripheral area of the lens available for the reflex images. For the same reason it has never hitherto been possible to examine the curvature of the posterior surface of the lens in the living eye, except with a more or less dilated pupil, never with a narrow pupil, and during accommodation only for small degrees of accommodation and in its central area exclusively. Examinations were therefore instituted to investigate the behavior of both anterior and posterior lens surfaces of our case under eserine. With regard to the anterior surface, it was found that images obtained were not sufficiently useful for our purpose.

The cause of this led to investigations the results of which are interesting enough to be given in a special paper.

(The anterior surface of the lens is in the majority of cases not spherical even during rest. This becomes more apparent in advancing age. Most of the lenses extracted in their capsule

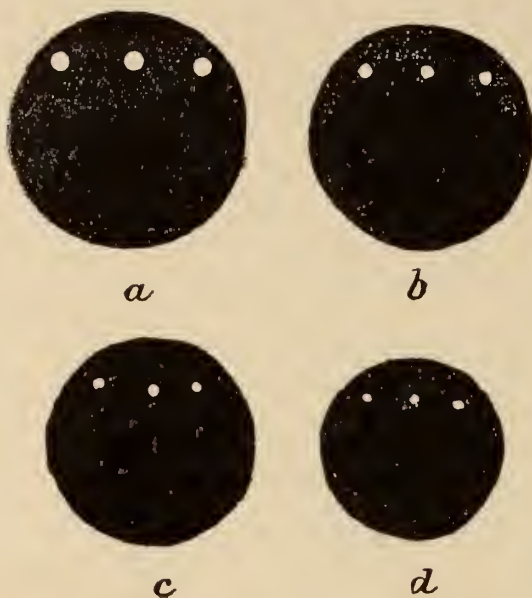


FIG. 5.—After Tscherning. A, rest ; B, C, D, increasing accommodation and concomitant decreasing pupil.

and shown by Major H. Smith to-day have an anterior surface more hyperbolic than spherical, and the same holds good for the posterior surface.)

The posterior surface of the lens, however, gave results as clear as they were unexpected (Fig. 6). The source of light was an uncovered arc light, doubled by two prisms. So little was there any trace of photophobia that the strong light was borne without difficulty for a long series of examinations. It was found that in rest the posterior surface of the lens was practically spherical, the two images (the smaller ones in Fig. 6a) being of the same size in all accessible parts of the posterior surface. Fig. 6a represents them formed in the center, near the posterior pole. After eserine had been applied the images formed in the same place showed a distinct approach to each other ; the distance between them had decreased (Fig. 6b). This gives an unmistakable proof for the increased curvature of the central portion of the posterior surface of the lens.

This increased curvature of the posterior surface of the lens had already been observed by Helmholtz, but then it appeared very small ; so small, indeed, that he did not attribute very much

importance to it, although he quite decidedly comments on it as early as the first edition of the *Physiologische Optik* of 1867. When, however, the images are formed from more peripheral portions of the posterior lens surface, by suitably turning the eye, the distance between them increases considerably, to a greater extent the more peripherally the image is formed. Nor is that all. If we arrange the lights so that they are vertical above each other, and that the reflection of the one is formed on a line that horizontally halves the lens, the other image is formed either below or above this line, and at the same time considerably displaced laterally (further from the center, nearer to the equator of the lens).

If the eye is turned in such a manner that the one image is formed as far above as the other below the horizontal meridian of the eye, then there is no lateral displacement between the two; they are both on the same vertical line. The lateral displacement is shown for the upper half of the posterior lens surface in Fig. 6c. If we construe it for three images, we obtain

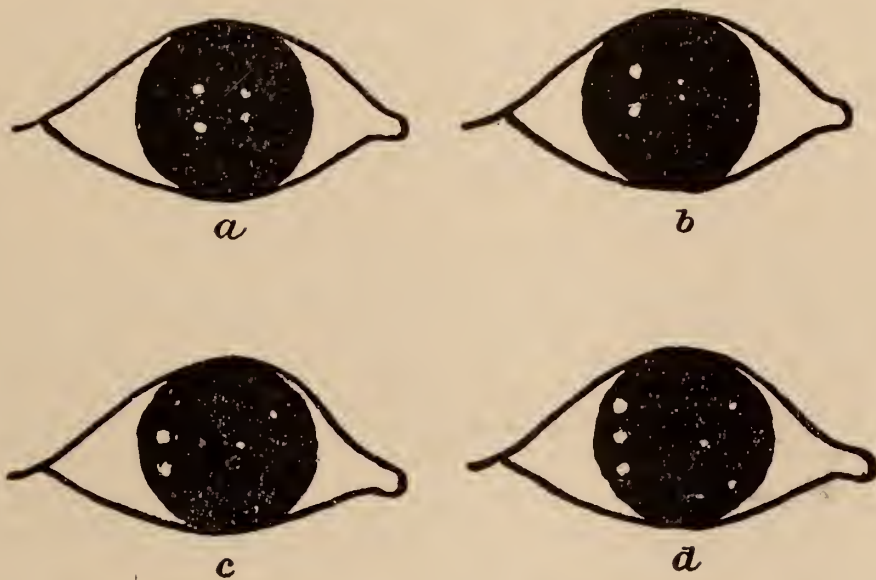
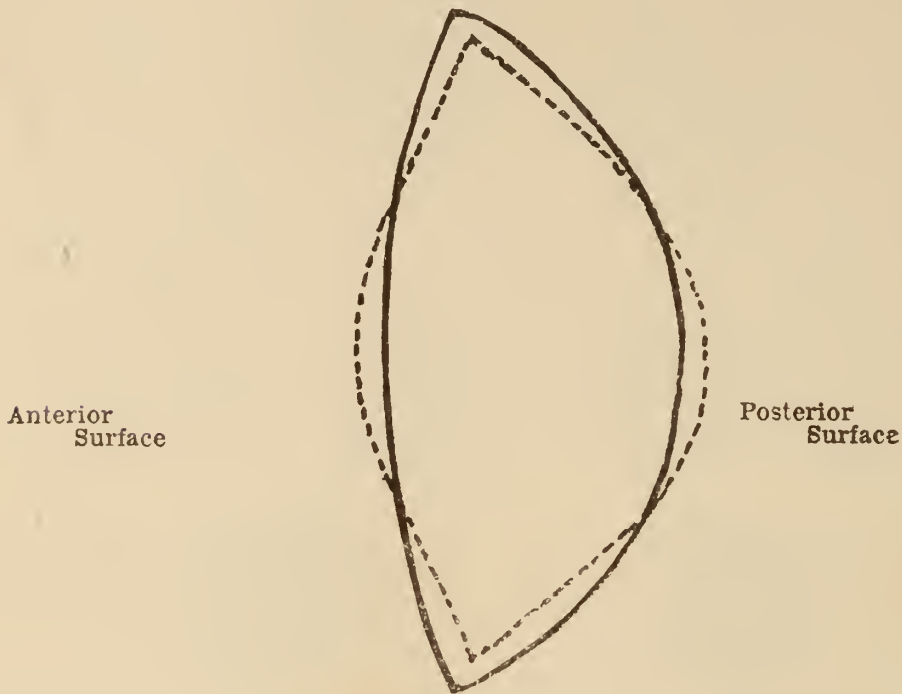


FIG. 6.—A, without eserine (rest, distance); B, with eserine, images near posterior pole; C, with eserine, images nearer equator; D, images nearer equator (3 images, eserine).

Fig. 6d, similar to Fig. 5d of Tscherning. The conclusion derived from this observation is that the posterior surface of the lens changes during accommodation in exactly the same manner as the anterior surface, and forms a posterior lenticonus, with increased curvature of the center and flattening of the peripheral portion.

That the central curvature is greater and more powerfully refractive than has been thought hitherto is made probable by the reduced size of the images obtained as against rest (I must here repeat that no mydriatics were used) and by the differences observed between the ordinary drugless state of a highly hypermetropic eye and after eserinizaton. As Professor Sher-



ington pointed out to me, the apparent reduction in the distance of the two images is enlarged by the increased refractive power of the accommodated lens, an enlargement caused not only by the increased curvature of the refracting surfaces, but also by the increased thickness of the lens. The fact is thereby established that during accommodation not only the anterior, but also the posterior surfaces participate in forming a double lenticonus such as sketched in Fig. 7. I had the privilege last month of demonstrating the case at Oxford at the meeting of the Physiological Society. On that occasion Professor Gotch was good enough to offer me the loan of the Helmholtz ophthalmometer belonging to Oxford. I hope at the earliest possible date to go over the above investigations again, and to be able with the help of that instrument to supplement by exact and minute quantitative measurements the observations given above. Though some of them are only qualitative, owing to the absence of such an incomparable instrument of precision as the Helmholtz ophthalmometer is, they are absolutely conclusive and

irrefutable. In a case like this negative results might not have had a claim to generalization. Here, however, a number of positive facts have been found, most of them in harmony with, and corroborated by, previous observations, none, not even the most striking new ones, incompatible with them.

I take this opportunity of expressing my sincere thanks to my friend, Professor Sherrington, who not only with the greatest courtesy placed the resources of the Physiological Laboratory of Liverpool at my disposal, but also assisted me indefatigably in the often very tedious process of verifying and confirming the observations and measurements made.

LARYNGEAL ŒDEMA.

BURTON HASELTINE, M. D.,

Chicago.

ONE of the most troublesome conditions encountered by the specialist in nose and throat diseases is the one known as œdema glottidis, or to use a more accurate term, laryngeal œdema. It is troublesome under almost any circumstances, for in acute cases it rapidly endangers life, while in chronic cases its ætiology is often obscure and its treatment only partially successful. The available literature on the subject is not abundant and, being in a measure vague and contradictory, is not satisfying to the active practitioner.

As to the causes of the trouble it is clear that it may result from the same conditions that produce œdema in other localities, such being: acute or chronic nephritis, cardiac lesions, uræmia from retention, uricacidæmia, alcoholism, and syphilis. It is also clear that, given a tendency toward dropsical formations, the structure of the larynx is such as to favor their occurrence there. It is less clear, but maintained by some observers, that laryngeal œdema may occur as a purely idiopathic affection without any discoverable cause, local or constitutional. Upon this point there is great difference of opinion, the majority apparently believing that in every such case some one of the above causes does exist unrecognized.

Among local causes we have traumatisms including injuries from violence, from noxious inhalations, or from swallowing caustic or superheated fluids. Chief of all must be mentioned tuberculosis which, although secondary to infections elsewhere, in producing œdema acts as a purely local disease.

And just here it is pertinent to take issue on one point with the classic teaching in regard to laryngeal tuberculosis. Most authorities hold that a pulmonary infection invariably precedes

the invasion of the larynx. This the writer is prepared to dispute, having seen two cases where the primary infection was undoubtedly nasal, subsequently extending to the larynx with no lung involvement. More than this, he is inclined to believe that a primary laryngeal infection may sometimes occur, though on this point he has no conclusive evidence.

The diagnosis of laryngeal œdema presents no especial difficulty even to those of limited experience with this class of diseases. The history will be suggestive in either the acute or the chronic form. In the former there will be a history of traumatism as above suggested, or of taking cold, followed by an increasing sense of constriction with difficulty of breathing. In the latter there will have been a pre-existing throat trouble with increasing symptoms suggestive of laryngeal obstruction.

In either case, the aphonia, partial or complete, the labored inspiration, and the strident expiratory sound will establish the diagnosis without much possibility of error. It should be remembered that this disease is rare previous to adolescence, being in many respects analogous to the croups of childhood. It is held that the formation of submucous exudate in the adult is a process similar to the formation of a pseudo-membrane in the child.

Inasmuch as the cases of œdema occur only in adults, therefore, it is almost always possible to use the laryngeal mirror with which the diagnosis is both positive and easy. When once seen it is scarcely possible to confuse this condition with any other, and in favorable cases we can not only determine the nature of the trouble but the exact location and extent of it as well. For there do exist wide variations in this respect.

We may have general œdema involving alike all visible portions of the larynx, and this may vary from a scarcely perceptible swelling to an almost complete obliteration of the breath-way. We may have a localized œdema of any portion of the larynx, and this may be of widely varying severity. We may observe an œdematous swelling of one or both vocal cords with no other structures implicated. Or there may exist a subglottidic œdema visible only with the rima widely open, and this may produce serious asphyxia with no extension to the higher laryngeal structures.

The treatment of these conditions will vary somewhat with the peculiarities of the individual case. Considerable variation may be observed as to the character of the swelling. In some it is composed largely of fluid exudate easily compressible, while

in others it is of a more unyielding nature. In acute cases the local application of drugs is usually of very little benefit, although adrenalin or the mineral astringents may be of temporary service. External ice applications or the Leiter coil may be useful and should be tried whenever time will permit. The most effective and permanently beneficial measure is scarification and this, with a suitable equipment, is not a difficult or formidable procedure. Appropriate lights and mirrors must be provided and a laryngeal lancet which must have a proper curve and be guarded to prevent too deep incision of the tissues. Cocain may be used, but is not imperatively demanded. Where the epiglottis is involved it may be scarified with a small, straight bistoury wrapped with thread to within one-fourth inch of the point. Multiple puncture should be made into the substance of the swelling until it is seen to be sufficiently reduced. The immediate effect is generally not as great as that which is observed after some time has elapsed, but a recurrence of the trouble is by no means uncommon. A second or third scarification may be called for, but will usually be less effective than the first one. Where the effect of one operation proves transient in spite of remedies and cold applications, which should always be employed, a more radical procedure is generally demanded and here a tracheotomy is advisable. The same may be said of those cases where, when first seen, the respiratory difficulty has become so great that life is endangered by any further delay. The first effect of the necessary manipulations in such a case is apt to be an increasing strangulation and complete asphyxia may result before relief can be obtained from any local measures.

This brings us to the consideration of intubation in œdema which in this instance is only mentioned to be condemned. The writer has yet to see a case successfully treated in this manner, and in his judgment it should rarely, if ever, be employed. Even in those rare cases where intubation can be successfully performed the local trouble is apt to be so aggravated by the presence of the tube that a subsequent tracheotomy will be demanded. The opening of the trachea, properly and leisurely performed, is a comparatively safe procedure and is beneficial in its effect upon the laryngeal inflammation. The tube may be worn until the natural breath space is again adequate, after which it may be removed and the wound allowed to close by granulation.

The treatment of the chronic cases or of those not advanced

to the stage of obstruction will depend upon the underlying cause, when this can be determined. The tubercular œdemas must be combated in practically the same manner as other tubercular cases. The syphilitic, lithæmic, cardiac, and nephritic cases must receive appropriate general treatment, only mild and palliative measures being directed to the larynx. The prognosis here is not based upon local symptoms, but upon the nature and severity of the underlying morbid state. Even where this is curable, however, we must not promise too much, for the voice quality is apt to be permanently impaired, due, no doubt, to a lessened flexibility of the laryngeal structures. Some amount of swelling often remains, too, as a sort of chronic hypertrophy of the normal tissues. Therefore in singers, speakers, and all professional voice users, the occurrence of laryngeal œdema must always be considered a serious misfortune.

In all cases and especially in those not tubercular nor syphilitic, good results may be obtained from the use of remedies according to the homœopathic indications. A variety of drugs may at times be called for, but the two that stand pre-eminent in this disease are apis and arsenicum. Each must be prescribed upon its peculiar symptomatology, but in a general way apis should be thought of for the acute form and arsenicum for the chronic. Likewise the apis is better suited to the cases of a lithæmic nature and those produced by alcoholism, while the arsenicum is suited to those showing kidney involvement. These remedies, where clearly indicated, will greatly assist in checking the trouble before the stage of serious obstruction, and sometimes even when asphyxia is considerable their administration will give relief.

For the cases depending upon associated cardiac and renal derangement we have a remedy of remarkable efficiency in hydragogin. This is one of the newer remedies and its sphere of usefulness is not yet accurately defined. It represents the active principles of *digatilis*, *strophanthus*, *scilla*, and *herniaria glabra*. Its action is directly upon the vascular system and the kidneys, with a slightly laxative effect upon the bowels. The blood pressure in both the liver and the kidney is increased and the functions of both are stimulated. The good effects are more lasting than from any other similarly acting drug, and it would seem that it exerts a really curative influence. Positive statements cannot be made from an experience as yet very limited, but the drug is worthy of trial and should receive fur-

ther attention. It may be given in ten- to twenty-drop doses three or four times a day.

The length of this paper is such as to exclude the clinical reports originally contemplated, but they could do little more than illustrate the principles already stated.

100 State Street.

INTUBATION VERSUS TRACHEOTOMY.

E. H. LINNELL, M. D.,

Norwich, Conn.

TRACHEOTOMY and intubation may be termed emergency operations. They are demanded quickly; there is but little time to consider their indications and comparative merits or demerits, and often, especially in small towns, the aid of a specialist cannot be obtained without dangerous delay. The general practitioner, then, should be able to perform either operation when occasion requires. It may be—yes, it usually is—a question of life or speedy death where operative interference is demanded, and hesitation or incompetence on the part of the medical attendant may be fatal.

I have thought, therefore, that a few moments devoted to a discussion of the indications for and against these operations and their comparative advantages might not be unprofitable. What I have to say is based not so much upon my own experience, as upon my observation and instruction in the Vienna clinics.

Briefly, the introduction of a tube into the larynx through the mouth, or into the trachea through an external opening, is called for in conditions of threatened or absolute asphyxia from obstruction of the upper respiratory apparatus. Such conditions may be œdema of the glottis, croup—idiopathic, spasmodic, diphtheritic, or attending the exanthemata,—laryngismus-stridulus, morbid growths, etc.

Given a condition of asphyxia where operative interference is demanded, which shall it be, tracheotomy or intubation?

Briefly, the advantages of intubation may be said to be :

- I. Quickness of execution ;

2. The absence of an external scar ;
3. Increased expectoration ;
4. Reflex stimulus to respiration.

Its disadvantages are :

1. Danger of increased stenosis when there is a loosely attached membrane, either by shoving down the membrane and thus closing the end of the tube, or by the membrane occluding the tube during respiration.

2. Increase of the stenosis by placing the tube in the esophagus instead of in the larynx. This objection may seem more imaginary than real, but anyone who has tried to make the operation on a struggling child with a flabby, depressed epiglottis, a long throat, and a short finger of the operator, will appreciate its force.

3. Danger of the child's biting off the thread and thus rendering the speedy removal of the cannula by the attendant, in the absence of the physician, difficult or impossible.

4. Making a false passage or perforation of the larynx.

5. Decubitus, or necrosis from pressure.

6. Atelectasis, evidenced by retraction of the abdomen in the effort to breathe.

The indications for tracheotomy may be summarized as follows, viz :

1. Where, after intubation, the respiration remains difficult ; or

2. Where, after using the tube for a period of two or three days, the breathing still remains difficult in the intervals of its removal.

3. Where pneumonia exists as a complication.

4. Where the fever is high continuously, 102° to 104° F. In such a condition the danger of decubitus is greater.

5. Septic diphtheria. (Danger of decubitus.)

6. Where there is stenosis of the pharynx from swollen tonsils or occlusion of the naso-pharynx with false membrane, in which case, of course, intubation would be ineffectual.

The disadvantages and dangers of tracheotomy are :

1. Necessity of an anæsthetic.

2. Danger of asphyxia by stretching back the head. This danger may be lessened by making a previous intubation.

3. Hæmorrhage.

4. Requisite after-treatment.

5. Danger of wounding the posterior wall of the trachea.

6. False introduction of the cannula, in front of the trachea, between mucous membrane and cartilage, or under the false membrane.

7. Secondary hæmorrhage (arterial) from decubitus.

The *arteria innominata*, it will be remembered, crosses the eighth or ninth tracheal ring.

8. Stenosis from scar tissue following ulceration (decubitus).

The after-treatment of tracheotomy is important. Secure damp air in the room to keep the secretions from drying and occluding the cannula. Remove the inner cannula frequently and keep it clean. On the third day remove the outer canula, and see if the patient can breathe without it. If not, reintroduce, but use another cannula. This renders less the danger of decubitus. After two more days remove again, and if necessary to reintroduce, use the first cannula again. Do not remove the cannula the first time before the third day. The wound heals rapidly, and by so doing a second operation might be necessitated. Be sure the wound is large enough to admit the cannula without undue pressure, but don't go low enough to endanger the *arteria innominata*. In Vienna we were strongly advised in all cases to make intubation before commencing a tracheotomy. It prevents stenosis from retraction of the head, and gives the operator more time, thus enabling him to operate more deliberately.

A few words as to the method of making an intubation may not be inappropriate.

The patient should be held in the upright position in the lap of the nurse. Let the child's legs be held between the nurse's knees. Let the arms of the nightshirt be slipped down over the hands of the patient, and held in the nurse's right hand, while she puts her left arm around the shoulders of the child, thus holding him firmly against her chest. Another assistant should stand behind to support the patient's head in an erect position with his right hand, while his left holds the mouth gag. If the patient is very weak, the tube can be introduced with the patient prone, having his head thrown slightly backward.

The patient being held in the manner described, with the mouth gag in position, the operator passes his left forefinger along the base of the tongue till he feels the posterior surface of the larynx. Then he withdraws it slightly until the tip rests upon the right edge of the larynx. Keeping it in this position, he presses the epiglottis firmly against the base of the tongue. Now, with the finger as a guide, the tube is gently and rapidly slipped along it, keeping it exactly in the middle line and pressed against the side of the finger. As the point passes backward, the handle is raised until the former enters the larynx.

If you do not keep the epiglottis pressed well forward, the point of the tube is liable to slip into the fossa between it and the base of the tongue. If you do not keep it directly in the median line, it is apt to pass into the esophagus at the side of the larynx, or if you do not follow carefully the side of the finger as a guide, or if you do not raise the handle sufficiently and at the right instant, it may pass posteriorly into the esophagus. When the cannula has entered the larynx and been pressed down very gently as far as it will easily go, the intubator is to be rapidly withdrawn, and at the same time the cannula is to be pressed still farther downward and forward against the base of the epiglottis with the tip of the finger.

At this step in the proceeding there are several precautions to be observed. Be careful not to twist the cannula and to keep it in the axis of the larynx. Do not press it sideways or posteriorly and do not press it against the intubator. In withdrawing the intubator, keep it also in the axis of the larynx. To do so, it must be raised first directly upward, not forward, until it is disengaged and the handle must be kept strictly in the middle line. If these points are not carefully observed, the intubator will stick in the cannula and the latter be displaced. Dexterity, rapidity, and delicacy of touch are of prime importance in making the operation. The thread attached to the cannula should be drawn between two of the upper teeth and fastened to the cheek, and the patient's hands should be bandaged so that he cannot displace it.

The length of time the cannula should be allowed to

remain is another important point. Eighty hours is said to be the maximum limit. I do not mean eighty hours continuously, but eighty hours in the aggregate. At first it should not be worn more than twenty-four hours without removal. Wait a few hours before reintroducing it. The second time it should be removed after eighteen hours. When the use of the tube cannot be discontinued after the aggregate length of time it has been worn amounts to eighty hours, it is better to make tracheotomy rather than to incur the risk of ulceration and necrosis by longer use of it.

The prognosis of intubation is said to be better than that of tracheotomy during the first year of life. With the latter there is more danger of pneumonia at this early age than later in life. The prognosis is less favorable when the temperature is high, and it is also bad when the false membrane is loose and vibratory, because of the liability of occlusion of the tube, and also when the pharynx and nares are occluded with membrane or swollen tonsils.

In making tracheotomy, care should be taken to make the incision exactly in the median line. The muscles should be separated with a probe or with the handle of the scalpel, and the isthmus of the thyroid raised and held out of the way by an assistant, and the tracheal rings incised (2 or 3) from below upward. An intubation set should be on hand for immediate use, inasmuch as the retraction of the head necessary for performing the operation is apt to produce asphyxia, as has been already mentioned. For this reason the introduction of the laryngeal cannula is often a desirable preliminary measure.

STATIC ELECTRICITY IN OTO-RHINO-LARYNGOLOGY.*

DR. SUAREZ DE MENDOZA,

Paris.

Abridged translation by W. U. Reynolds, M. D., New York, from *Rev. Hebdom. de Lar., d'Otol. et de Rhin.*, Avril 18, 1903.

FOR several years past I have been using electricity in the treatment of the ears and throat, and have come to the conclusion that some of the results are attributable to mental suggestion rather than the actual effect of the current or spark.

This opinion I stated when discussing Dr. Libotte's article. Recollect, gentlemen, that our honorable confrère said to us that by the use of static electricity we quickly control the vertigo or the chronic dizziness as well as the accompanying symptoms: headache, buzzing in the ears, unsteady gait, etc.; upon the whole, almost all the symptoms of Ménière's disease.

At that time I believed that all the cures or apparent cures of Ménière's symptoms which I had accomplished in a large number of cases under the treatment by the static current were due to the quinine and pilocarpine administered as adjuvant treatment.

Since that time, probably influenced by the contagious enthusiasm of my confrère, I have resumed my experiments, and must admit that in four cases of distinctly Ménière's vertigo the result of long continued treatment has been nil or almost so.

On the other hand, I have relieved other aural affections in males and some strong-minded females who, I think, would not be influenced by suggestion.

The following are histories of three typical cases:

Case I.—Mr. X., aged 29, double catarrhal otitis. H. d., R. ear = 5 centimeters; L. ear = 10 centimeters. Politzerization relieves greatly. The classic treatment: antiseptics to the nose,

* Read to the Société d'Électrothérapie Française, March 16, 1903.

mouth, and throat; catheterization; insufflations of warm vapor to the m.t.

The hearing became normal again in three weeks. L. ear = 65 centimeters; R. ear = 60 centimeters. The sensation of fullness disappeared, but the patient retained abnormal noises (buzzing, whistlings, distant drumming), that annoyed him greatly. The tube being open I stopped the catheterization and continued the insufflations with mentholated air and the tympanic massage of feeble pressure (5 to 10 "centiemes" of atmosphere).

At the end of three weeks the patient found himself relieved, but not cured. The noises still troubled him.

I then stopped all treatment and gave static electricity.

For sixteen days I made one application for five to ten minutes of mild shower of sparks in the canal and sparks of strong tension on the mastoid process.

Upon the third application the patient found a great relief which continued daily to increase up to the sixteenth day, when considering him cured I arranged with him to stop the treatment, and come see me every fifteen days.

Case II.—Mr. B., 68 years old, of strong constitution, complained of deafness of two years' duration. In the examination I found a double sclerosis, more pronounced on the left side. He heard the spoken voice with difficulty. Catheterization, massage, Politzerization, dilatation of tubes with bougies, were employed, but with only slight amelioration.

Static electrical applications of five to ten minutes three times a week. From the first application hearing sensibly improved on both sides. The improvement progressed rapidly. At the end of several applications the patient began to hear better, not only in his right ear, but also in his left, which he had believed forever lost.

Six weeks after the first application the hearing is perfect in right, good in left.

The patient—who had tried several treatments without success, and who believed his deafness incurable—had become morose and taciturn. To-day he has recovered his normal state and is gay, happy, and as he expresses it "S'entend parler avec plaisir."

Case III.—Mr. L. P., aged 38 years. A succession of badly-cared-for colds was followed by loss of voice. Several treatments were tried, (powders, cautery, massage, sulphurous waters) but without result.

In my first examination I found some redness and a small infiltration of the vocal cords with paresis of the adductors.

Some cauterizing with zinc chloride, added to vibratory massage of the laryngeal region, vapor baths followed by cold douches and by the administration of coca in large doses, relieved the patient enough to enable him to attend to his work, but the voice always remained a little muffled, though the congestion and infiltration of the vocal cords had disappeared.

Ascribing the remaining aphonia to the muscular weakness, I decided to try static electricity. After each application of the breeze, followed by sparks, the improvement became every day more perceptible, and in six weeks the tone is absolutely normal.

Laryngoscopic examination shows that the juxtaposition of the cords at the moment of the emission of sounds is perfect.

Not to make useless repetitions, I will say that in several other cases impaired motility of the laryngeal muscles from abuse of phonation, muscular paresis following inflammation from cold, and from non-use in cases of operation for laryngeal polypi of long standing—static electricity has given me at least as good results as this.

In rhinology, although the use of static electricity is less easy, I have obtained marked relief of troubles following hyperæmia of the pituitary membrane in individuals having total or partial hypertrophy of the mucosa and who recoil before the word "operation."

In such cases it is advisable to give medical treatment long enough to accustom the patient to the idea of the necessity for surgical intervention.

By shielding the entrance of the nasal fossæ with very thin strips of wood, it would be possible to direct the static breeze deeply upon the turbinal. The depleting action of the breeze is felt in a few minutes, and by associating the electric douche with the direct treatment to the level of the frontal sinus, especially if there is dull headache, relief is obtained of short duration sometimes, but often long enough to encourage the patient to return for another treatment on the morrow.

If, to the encouraging results that I have just cited, we add those obtained by Vallois, Ménière, Nicolai, Tchatzki, Lewin, etc., we can conclude that while static electricity is not a panacea in oto-rhino-laryngology, still it is certainly advisable to try this method in cases not amenable to other modes of treatment.

SYMPOSIUM.

1. *Is the abolition of the "vision reflex" [the eyes, held open, following a finger moved before them] a reliable test for complete narcosis during the administration of a general anæsthetic? Is it preferable to touching the cornea?*
2. *Have you seen hypermature cataract complicated with glaucoma, iritis, or keratitis, inferring that extraction should have been performed at maturity in order to prevent these complications?*
3. *What effect, if any, upon the voice have you observed from tonsilectomy? From tonsilotomy?*

LEIGH Y. BAKER (Washington): The "vision reflex" may be a perfectly reliable reflex (I cannot say), but it is less easily made, and therefore not so practical as touching the cornea.

2. I do not believe that delayed operation is wholly responsible for the complication, nor can it be inferred that the presence of a hypermature cataractous lens is a predisposing factor in glaucoma, iritis, or keratitis.

3. I have seen both improvement and impairment of the voice following both operations. Tonsilotomy I consider preferable unless tonsilectomy is distinctly indicated.

IRVING TOWNSEND (New York): 3. As the terms tonsilectomy and tonsilotomy are applied to operations for complete and partial removal of the faucial tonsils and differ only in degree (which in most cases is quite insignificant), no attempt will be made to differentiate between "the effects on the voice from removal of the tonsils" by either operation. It is necessary, however, to understand whether the question relates to the speaking voice or the singing voice, or to both, as they must be considered separately.

The quality of the speaking voice is at once modified by the removal of tonsils which are much hypertrophied, in that the so-called "nasal twang" or "dead voice," is replaced by re-

sonant tones as soon as the pharyngeal vault resumes its normal function as a sounding board.

This result has become clearly understood and requires no further elucidation. In its relation to the singing voice, your query opens up a much wider field, in which popular tradition, theory, and clinical experience are not wholly in accord.

Many professional singers and vocal teachers maintain that there is great danger of impairment of the quality and tone of the voice after removal of the tonsils, and sometimes cite cases which apparently confirm their belief. From my own limited observation and the statement of specialists whose patients are chiefly vocalists, there is no good reason to believe that this assumption is correct, as in nearly every instance the history in these cases shows that the vocal cords had been affected by previous inflammation. The damage had already been done, but the fact that the removal of the tonsils failed to restore the former quality of voice was taken as proof that the impairment was a result of the operation. Until I succeed in finding a single authentic case in which there are good grounds for attributing the loss of vocal power to tonsilotomy, I shall continue to regard that belief as a mere tradition without any reliable clinical evidence to substantiate it.

BURTON HASELTINE (Chicago) : 1. The "vision reflex" has not in my experience proved a reliable test for complete narcosis. It is always more or less troublesome, often not applicable at all, and seems to me to have no advantages over the ordinary corneal reflex.

2. I have seen one case of glaucoma where the cataract had been allowed to become hypermature. It would, of course, have been better had an extraction been made in this case, but I do not feel justified in drawing therefrom a general conclusion.

3. It is my practice now in operating upon tonsils to remove them as completely as I am able. The only effect which I have ever observed upon the voice is the benefit which naturally results from the removal of the obstructing organ and the improvement in existing catarrhal conditions.

PRACTICAL HINTS.

Spectacle frames for infants, says Worth [he ties them on at as early an age as three months for the cure of squint], should be of tempered steel. A broad flat plate of tortoise shell should be fitted under the bridge so as to distribute the pressure on the nose. The sides should be straight and very short, reaching to just above the ear, and ending in a loop. About three-quarters of an inch near the loop should be wrapped with wool. These frames, tied on with tapes, from loop to loop back of the head, are very comfortable. The rims hold the lenses so that in case of accident the latter crack rather than chip.

Fix the eye, in operations involving corneal incision, by the assistant holding double silk sutures which have been passed through the subconjunctival tissues about 2 mm. from the corneal margin, in the horizontal meridian, on either side. Both vertical and lateral movements can be thus controlled, and the corneal incision has less tendency to gap than when the eye is fixed with forceps inferiorly.—J. Tatham Thompson.

Nitrous oxide anæsthesia will hardly become popular for the adenoid operation because it has to be watched so closely, and particularly because consciousness returns so quickly. Anything that interferes with respiration contra-indicates nitrous oxide, and adenoids certainly do.

Lasting fame, says Critchett, awaits the man who devises a safe way of producing a cystoid scar establishing a fistula for chronic glaucoma.

Detachment of the choroid after cataract extractions and iridectomies, according to Fuchs and Axenfeld, is much more frequent than is generally supposed. Reattachment is hastened by constant wearing of a bandage. If non-inflammatory it does not injure the eye permanently. Open treatment of glaucoma iridectomy is therefore advisable.

Spring catarrh is sometimes mistakenly diagnosed as granular conjunctivitis—trachoma. The history of the case and a very careful examination are often necessary for the differential diagnosis. The pericorneal variety must not be confounded with phlyctenular keratitis.

In albuminuric retinitis the amount of urea excreted in twenty-four hours is of more importance than the amount, or at least the presence, of albumin.

In cases of infective dacryocystitis where the eyeball is to be opened, first tie off each canaliculus with a simple suture, after filling sac and canaliculi with an argyrol solution.

For irritable spasm of the ciliary muscle (of course remove the cause of the eye strain) give jaborandi, especially if there be nausea. Agaricus if there be burning and fibrillar twitches, particularly in the lids. Lilium tigrinum in uterine nervous cases, which may also have palpitation of the heart. Physostigma when there are twitches or pulling felt in the eyeball, and temporal headache. Causticum and gelsemium are more for a paretic condition of the ciliary—or other—muscles.

Suspect every crying baby of possible earache until satisfied the cause is something else.

In the radical mastoid operation test for the facial nerve by carefully going over its course with a curved needle connected with a battery whose other pole is applied to the neck, and watch for twitches. Or, connect the curette with the battery.—H. L. Culbertson, Zanesville, O.

SOCIETIES.

TRI-STATE MEDICAL ASSOCIATION, Chicago, April 21, 1902.

Discussion of Dr. H. A. LEIPZIGER's Paper—*Hæmorrhage after Tonsilotomy*.

W. L. BALLENGER (Chicago).—The more I operate upon tonsils, and I have operated in recent years upon many tonsils, the less I recommend the use of the ordinary remedies, as styptics, pressure, etc. I have found that in these cases it is better to treat them as a surgeon would treat hæmorrhage in any other part of the body. If serious enough to require

interference at all, I use a large artery forceps which can be easily introduced through the mouth, and if it is a spurting hæmorrhage, I get hold of the bleeding point and seize it, and thus check it. With the pressure brought to bear upon the end of the tonsil, the hæmorrhage does not recur, as a rule. For an oozing hæmorrhage I have in one instance introduced as many as four artery forceps into the mouth at one time, and thus succeeded in compressing the entire cut surface of the tonsil with the result of checking the hæmorrhage. I used in one case last week a short-handled artery forceps in this way.

There are no special objections made to this method by the patients, except that it is a little awkward in the mouth. I had a case that was operated on by the "bloodless method" of operating. (Dr. Pierce has said that there is no way of operating bloodlessly upon the tonsils.) This patient in the first few hours bled four pints. I did not see her until the hæmorrhage had ceased. Even the fainting away did not stop the hæmorrhage, although the arterial blood pressure must have been much reduced. The hæmorrhage was stopped by the physician in attendance, who made use of a pair of long uterine dressing forceps that he chanced to have in his bag. He used these as he would have used an artery forceps, clamping the stump of the tonsil, and the hæmorrhage soon yielded.

ILLINOIS STATE MEDICAL SOCIETY. EYE, EAR, AND THROAT BUREAU. May 20-22, 1903. (Reported by F. M. PENDLETON.)

Ophthalmia Neonatorum.—J. L. FIREBAUGH (Robinson, Ill.)—The essayist dwelt upon the importance of the subject, went into the history of the trouble dating back to the early thirties, and spoke of the limited amount of space given to this disease in general works on surgery and midwifery. The works on ophthalmology are not in the hands of the general practitioner. The oculist usually gets his cases second-handed, many times after the disease has done its deadly work.

Dacryocystitis.—E. E. CLARK (Danville, Ill.).—The writer speaks of the extremely meager amount of literature on the subject. Retained secretions he believes to be the immediate causative factor in the production of the purulent discharge.

As to the treatment he uses chloride of zinc in solution of a strength of 5 to 20 per cent. He reports violent reaction from the 20 per cent. solution and recommends 5 per cent. as applicable to most cases.

Nephritic Eye Lesions.—WILLIS O. NANCE (Chicago).—A number of original colored ophthalmoscopic drawings illustrative of neuroretinitis nephritica were presented. The essayist considered the latter the most important ocular lesion of nephritis, and dwelt upon its diagnostic and prognostic significance. He quoted the statistics of eight observers as regards prognosis in typical albuminuric retinitis, and cited twenty cases occurring in his own practice, none of the patients living more than thirty months after the discovery of the retinal lesion.

Recurring subconjunctival hæmorrhages occurring in persons over forty years of age should be looked upon with suspicion. The author believes this symptom to be one of considerable import, and in a number of instances has proven the presence of chronic nephritis, hitherto unsuspected.

Primary iritis, paresis of the extrinsic ocular muscles, chemosis, œdema of the eyelids, are other lesions of nephritis of greater or less importance. The author does not believe that cataract, when found in nephritic cases, is the result of the renal malady.

A Study of Nystagmus.—F. S. CROCKER (Chicago).—In unilateral cases, of which few are seen, the movement is nearly always vertical, never rotary or oblique. All nystagmus ceases during sleep. Slight associated movements have been at times observed of the head, of the upper lid, and even of parts of the pharynx and larynx—these latter with lateral nystagmus indicate (according to Gower) cerebellar tumor.

It has long been known that the oculo-motor centers are acted upon by the equilibrial centers: pressure on the semi-circular canals producing nystagmus, usually lateral. Nystagmus has been found associated with morbid affections of the corpus striatum, corpora restiforma, and corpora quadrigemina, the fourth ventricle, and the cerebellum. It is nearly always found in disseminated sclerosis, and in most cases of Friedreich's disease; is very rare in locomotor ataxia and other diseases attended by tremor. It is never present in paralysis agitans; is occasionally present in muscular atrophy and multiple neuritis; is often found in syringomyelia and primary lateral sclerosis, and less frequently in the latter stage of severe uræmic poisoning and in marked anæmic conditions.

In diagnosis nystagmus is of great significance because it shows the presence of more than functional disturbance. A search for it should never be omitted, and should always include upward movement of the eye.

ILLINOIS HOM. MED. ASSOC. BUREAU OF EYE AND EAR. May 13, 1902. (Reported by BURTON HASELTINE.)

Ill Effects of too Early Use of the Eyes for Reading.—C. J. SWAN (Chicago).—The effort to focus the eye for small objects near at hand is greater than in later life; not being accustomed to reading, the child can't comprehend a word, line or sentence at a glance, but must need study each letter. The frequently eager brain of the child, and the attractive, exciting kind of literature produced for the young often induce the child to spend time reading that would be better occupied in healthful outdoor exercise. The author closes by saying:

Everything else being equal, I would prevent the child from learning to read until he was at least eight years of age; I would allow no reading outside of school hours until the age of eleven, and would then select his reading so that what he read would do him some good. There are plenty of books nowadays dealing with facts in nature and in history which are quite as interesting as story books, and are vastly more profitable reading.

Infectious Tonsillitis.—W. M. STEARNS (Chicago).—The author discussed more particularly the inflammations of peritonsillar tissue, as these are more often productive of abscess than inflammation of the tonsil itself. The disease is often confined to one side of the throat, but this is no argument against its constitutional origin. It may result from either a local infection, or a general systemic condition.

The point of greatest swelling as well as the most frequent location of pus is above and in front of the tonsil toward the soft palate. Rarely will pus be found by lancing the tonsil proper.

Another class of cases is that in which is found infection of the cervical lymphatics through the tonsil. A case was cited in a boy of twelve, consulting for enlarged glands of the neck for which several general surgeons had advised removal. At the suggestion of the late Dr. Fenger, the author removed the faucial tonsils, which showed local inflammation, and as a result the cervical enlargements slowly subsided and the child regained perfect health. Some forty slides were made from the extirpated tonsils, but no evidences of tuberculosis were found. Many cases of enlarged tonsils are amenable to medical treatment, but cases are often encountered wherein nothing but an operation is of any service.

Discussion.

DR. O. L. SMITH: The most important thing in treating a case of enlarged tonsil is to hunt out and remove the cause. I have seen cases in which removal of tonsils had been followed by recurrence as many as eight times, simply because the cause was a constitutional one, and still active. Whether or not a non-surgical treatment will be of service depends upon the character of the hypertrophy which, if soft, will react to medicine, but if fibrous, can only be relieved by operation.

The Operative Treatment of Mastoid Disease.—DR. CONVERSE.

Discussion.

DR. BURTON HASELTINE: The question of operation in mastoid disease has produced as much argument among aurists as that of appendicitis has among surgeons. The safest ground is a conservative middle one. I would emphasize especially the importance of free incision of the drumhead, even in cases where a moderate perforation already exists. I always make, if possible, two incisions, the second at right angles to the first, and follow this with a gentle Politzerization. This not only helps to free the tympanum of retained pus, but reduces the engorgement of mucous membranes, favoring drainage. This is still further assisted by the use of adrenalin solution in the tympanic cavity, which I found of great assistance in re-establishing communication between the mastoid antrum and the middle ear.

OHIO STATE MEDICAL SOCIETY. EYE, EAR, AND THROAT SECTION.
Toledo, May 28-30, 1902. (Reported by EMMA L. BOICE-HAYS.)

Acute Suppurative Ethmoiditis.—JOHN A. THOMPSON (Cincinnati).—He gave the usual symptoms with acuteness of vision lessened on the affected side. When recognized the disease can be arrested in from four to seven days—under proper treatment. This is free drainage, cocain and adrenalin locally, with morphia internally.

Discussion.

J. H. McCASSEY (Dayton).—The casts so often attributed to atrophic rhinitis are almost always due to suppurative ethmoids, and the nose should be properly cleansed.

DR. THOMPSON replied that he or no one else had ever seen these casts of turbinals formed in four days, or in acute suppurative ethmoiditis, which was the subject of his article.

SYMPOSIUM ON DIPHTHERIA. SYMPTOMATOLOGY AND CLINICAL DIAGNOSIS. F. D. CASE (Ashtabula). The subject necessitated a text-book article, of which this was a good instance.

Medical Treatment.—J. C. CROSSLAND (Zanesville) advocates antitoxin, also uses calomel and tinct. chloride of iron internally, as well as strychnia and stimulants. Diet should be liquid. Throat swabbed with hydrogen dioxide. Patients suffering with tuberculosis of throat require larger doses of antitoxin.

Surgical Treatment of Laryngeal Diphtheria.—C. L. PATTERSON (Dayton).—The writer's method of intubation was given, but he claimed that surgical treatment was not often necessary since antitoxin was discovered.

Diphtheriana—A Survey.—PARK L. MEYER (Toledo).—A paper written in a satirical style opposing the employment of antitoxin and the utter dependence of the profession, at present, upon the bacteriological examination for diagnosis. Among other reasons given, a few years ago microscopists held that the typical or distinctive bacillus of diphtheria was club-shaped, while now it is known to assume various shapes.

Discussion.

A. J. OCHSNER (Chicago) considers antitoxin a specific in diphtheria if used before septic conditions present. He claims that he has operated only twice in the last ten years, and that now, since the introduction of antitoxin, diphtheria is a medical and not a surgical disease.

JAMES TYSON (Philadelphia) advocates the use of antitoxin even if uncertain as to diagnosis. That it does no harm in follicular inflammation. He would not be as emphatic in its use as an immunizing agent as was Ochsner, but thought he would use it.

DR. MEYERS claimed that deaths from antitoxin were not all reported, but Tyson reports two from his own text-book, and thinks that antitoxin is not responsible for the deaths.

He agrees with Dr. Ochsner that diphtheria is now classed as a medical and not a surgical disease.

THOS. HUBBARD (Toledo) claims that Dr. Meyers was prejudiced when he said that antitoxin produces death. In one case of his own he had the intubation tube in his hand instead of the syringe, and so was enabled to introduce it quickly, and the patient lived. Had the conditions been reversed, the claim would have been that antitoxin killed.

DR. CASE (Ashtabula) gives antitoxin as soon as he suspects diphtheria, from 3000 to 5000 units.

DR. MEYERS, in reply, claimed that he never used antitoxin as an immunizing agent, and yet he had never had the second case develop in the same family when precautionary methods were used.

CONNECTICUT MEDICAL SOCIETY. May 28 and 29, 1902.
(Reported by J. W. Jewett.)

The Eyes of School Children.—S. S. MILES.—After his appointment as examiner of the eyes of school children, he found that a careful and thorough examination of all children could not be done without assistance, and that he had been obliged to ask the teachers to aid him in the work. The teachers sent to him only those children who had a manifest defect in vision, or who needed treatment for some diseased condition of the eyes. Out of 902 cases that were sent to him to be examined, 102 had hyperopia, 41 had myopia, 162 had astigmatia, and 32 had normal vision with marked defects in the eyes. The number of defective eyes were less than had been reported by observers in other American and in European cities. Forty-one children were wearing glasses. Of this 41, seven did not need glasses. Squint was present in twenty of the boys, and fourteen of the girls. This proportion is at variance with private practice records. Thirty-nine had diseases of the lids or eyes sufficient to call for treatment.

Connecticut is the first, and so far, the only [?] State that requires, by law, the examination of the eyes of school children. These examinations are at present made by the teachers, and necessarily must be cursory. Pupils who are far-sighted may have normal vision, and may be overlooked, and the same holds good for slight degrees of disease of the fundus.

It is desirable that all children be examined for defective

vision at the beginning of school life, and once in three years afterward. By careful examinations and corrections, myopia may be arrested; strabismus may be prevented, or cured, if not too great; and most cases of asthenopia and headache relieved by the appropriate treatment. The hygiene of the school should be thoroughly attended to; the desks and seats should be of the proper height for the different ages; the posture of the scholar should receive attention and defects remedied; the light should be sufficient, and come from the right direction; the type should be large, and the reading matter should be "leaded." The teacher should teach something of the physiology of personal hygiene, and the care of the bodies and of the eyes of school children.

ABSTRACTS FROM CURRENT LITERATURE.

The Choice of a General Anæsthetic in Ophthalmology.—Edward Jackson, Denver.—*Penn. Med. Jour.*, September.

The shorter an operation the more important, relatively, is the period during which anæsthesia is being established. Other things being equal, the anæsthetic giving rise to the least oozing would unquestionably be the best; the same may be said about vomiting, coughing, etc.

Nitrous oxide.—One of the safest, is not wholly without danger to persons of impaired respiratory capacity or brittle vessels. Its chief objection is the amount of venous congestion that it causes.

Ether.—More than any other causes vomiting and coughing. Death from ether is comparatively sudden and apparently accidental. It is out of the question if actual cautery is to be used [if gas be burning in the room coughing will be induced].

Chloroform.—Is perhaps more likely to cause death by inhibiting the heart's action. In its favor may be mentioned the briefer anæsthesia, smaller quantity [? and less congestion. M.].

Ethyl bromide.—Is the most rapid and manageable of the general anæsthetics; in the present state of our knowledge it can

hardly be regarded as less dangerous. It must be used drop by drop, more cautiously than chloroform. It is said to favor arterial bleeding, but in a considerable experience with it "I" have never observed such unfavorable influence. It certainly causes very much less venous oozing than does ether. Anæsthesia is produced within one minute, generally in 30 seconds; recovery is complete within one or two minutes after stopping its administration. It is not attended with any relaxation of the muscular system. The rapid recovery may be a drawback if not closely watched. It is unsuited for use in prolonged operations. It is good for squint operations in young children, even for graduated tenotomy. A general anæsthetic must be used, if the eye is severely inflamed, for operations that open the eyeball; e. g. glaucoma, acute traumatic cataract. Nitrous oxide and ethyl bromide are scarcely to be considered for such operations.

J. L. M.

Tubage of the Pharynx for Facilitating the Administration of Anæsthetics and Preventing the Inhalation of Blood in certain Operations on the Mouth and Face.—Geo. W. Crile, Cleveland, O.—*Annals of Surgery*, June, 1903.

"(1) Patient is reduced to full surgical anæsthesia; (2) the pharynx is cocainized; (3) two drain-tubes as large as possible are passed through the nares to the level of the epiglottis, the tubes are then severed at an equal distance from the nose; (4) the mouth is well opened and the tongue drawn out; (5) the entire pharynx is then packed with rather large pieces of gauze; (6) if thoroughly done, the base of the tongue is carried well forward, and an air chamber with which the rubber tubes and the larynx communicate is thereby formed." A funnel may be attached to the distal ends of the tubes to facilitate the administration of the anæsthetic.

A. W. P.

Chronic Trachoma Cured by the X-Ray.—H. F. Cassidy and F. C. Bayne.—*Jour. of E., E., and Th. Diseases*, March–April, 1903.

H. M., white, aet. 23. Granulated lids for nine years; much pain, lachrymation, muco-purulent discharge, intense photophobia. Has had all sorts of treatment. Lids thick, reddened, their mucous membrane thickened, congested, and studded with

typical trachoma granules. Used Heinde's 20-inch coil, modified Wehnalt interrupter giving 2800 interruptions a minute; direct current 250 volts, 2 1-2 amperes. Began through closed lids twelve inches away, for three minutes every ten, then five days, then tri-weekly; spark-gap one-sixteenth of an inch. These caused excessive lachrymation which finally was not excited by them. The time of exposure became five minutes, eight minutes having caused dermatitis; the spark-gap increased to one inch. After the sixth treatment there was great improvement noted; by the twentieth, one eye, and by the thirty-fifth, the other was entirely free from trachomatous granules. There is no photophobia, the lids, although a little inflamed, are not thickened, the mucous membranes while still red are free from discharge; she uses her eyes constantly without discomfort.

Will not acute cases respond more readily? J. L. M.

A Case illustrating Operative Procedure for Relief of almost Complete Adhesion of Soft Palate to Posterior Wall, the Result of Tertiary Syphilis.—Herbert Tilley (Laryngological Society of London).—*Jour. Lar., Rhin. and Otol.*, May, 1903.

Operation. In view of the possibility of free hæmorrhage occurring when the adhesions were divided, a preliminary laryngotomy was performed. The soft palate was then completely separated from the pharyngeal wall, and a strong silver wire was passed from before backwards through the soft palate close to its junction with the hard palate, and about half an inch from the middle line. The distal end of the wire was then made to repierce the soft palate close to its free margin and from behind forwards. By this means a short segment of the wire rested on the posterior surface of the soft palate. The free ends of the wire were then passed from behind forwards, one upon each side of the root of the incisor tooth, firm traction exerted on the palate and the wires twisted upon one another and cut off short in front of the tooth. A similar procedure was then adopted on the other side of the palate.

In discussion P. de Santi said the original method of Spencer differed from the above only in that he did not make a preliminary tracheotomy, and he sutures the soft palate to the muco-periosteum of the hard palate instead of a tooth. Most of the disputants reported that these operations on syphilitic stenosis relieved the obstruction for only about two years, after which re-contraction took place.

A. W. P.

A Pin in the Larynx; its Removal by an Original Method.—Otto J. Stein, Chicago.—*The Laryngoscope*, May, 1903.

Examination showed "the pin just to the left of the median line, lying obliquely across the introitus of the larynx, one end buried in the interarytenoid region and the other in the left ventricular band toward its anterior end. The great amount of swelling present and the granulation tissue that had sprung up about its ends made it impossible to see more than about one-quarter of an inch of the center of the pin." On account of the firmness with which it was embedded in the sides of the larynx, three attempts to remove it with the customary instruments were futile. The only way to remove it without external incision was to bend the pin in the middle. To accomplish this the author had an instrument made of which the following is a description: "A cannula, bent at the proper angle to enter the larynx, was very firmly fixed at right angles to a heavy piece, carrying a lever, to whose upper end was fastened the stiff steel wire that passes through the cannula. This wire terminates as a hook at its distal end." Successful removal of pin was made with this instrument. A. W. P.

On Transillumination of the Maxillary Antrum and of the Eye.—C. Ziem, Danzig.—*Jour. Lar., Rhin. and Otol.*, June, 1903.

The three methods—1, Herzog-Vohson or Vottolini-Herzog—(the difference shown in transilluminating the cheeks), 2, Davidsohn symptom (difference in the illumination of the pupils), and 3, the Kelly-Burger method (the subjective sensation of light in the two eyes)—are considered, the latter very thoroughly in seven patients. Also description of exhaustive experiments on fresh heads and eyes of pigeons, hens, rabbits, and cats with the Davidsohn method. From which the following conclusions can be drawn. (1) Transillumination is favored less in thinness of the osseous walls, poverty of pigment in the eye, decreased blood-content of the eye, thinness or absence of the soft parts, especially in the muscles covering the bulbus.

(2) Transillumination is prevented or rendered difficult by thickness of the osseous walls, eyes rich in pigment, greater blood-content of the eye, good state of development of the soft parts covering the bulbus.

(3) The experimental transillumination of the bulbus which is here described takes places not only through choroid, but also through the optic nerve. The latter is the only way in the case of an eye rich in blood and pigment and covered with the normal muscles, also rich in blood.

Because transillumination is affected by the thickness of consistency of the tissues through which the light passes and by the refraction of tissue, *e. g.*, polyps in the nasal cavity, the author considers it very unreliable,—not at all pathognomonic.

A. W. P.

Iodine Locally to Corneal Ulcerations.—J. Lawton Hiers, Savannah.—*Phil. Med. Jour.*, November 29, 1902.

The author has treated over 200 phlyctenular and traumatic cases, but his experience of five years has led him to the conclusion that it is especially adapted to indolent ulcers. It lessens rather than increases scar tissue. He prefers the officinal tincture. A stop speculum is used; the cornea thoroughly anæsthetized, the ulcer curetted, well dried and touched with iodine thoroughly, yet with care that no other spot is reached by any iodine. The eye is then washed out with sterile water or boric acid solution and treated as a recent traumatism.

Maggie L., aet. 19; phlyctenular corneal ulcer two mm. in diameter and three from limbus, involving half the thickness of the cornea. Superficial vessels greatly injected, lachrymation profuse and the eye extremely painful. Cauterized under cocain, washed with boric acid and 1 per cent. atropin instilled. Ordered to bed in a dark room with boric acid and atropin locally. The inflammation subsided in five days, but recurred a couple of days later. Cauterized again and cocain substituted for the atropin with heat every three hours. Immediate improvement, and by the end of the fourth day the ulcer was but one mm. in diameter. It soon relapsed to the former condition greatly aggravated, and sloughing of the initial sore was greatly evidenced. After many vain attempts to arrest the trouble iodine was determined upon and applied as above by means of a few fibers of absorbent cotton tightly twisted on a probe, the excess having been wiped off with a piece of cotton. The eye was washed with a saturated solution of boric acid, and patient put to bed with small pads of absorbent lint moistened with boric acid grs. xv ad oz. j, changed at brief intervals. At the end of twenty-four hours the ulcer had completely healed. J. L. M.

Electrocautery Treatment of Corneal Wounds and Ulcers.—John A. Donovan, Butte, Mont.

Until about three years ago the author used galvanic cautery as a last resort. With increased experience the frequency in his use of the electrocautery has changed in his rhinological work in inverse proportion to its use on the eye. The average simple non-infected corneal ulcer or wound will heal just as readily if simply protected, kept clean and left alone. Therefore the routine practice of touching all corneal abrasions with iodine, phenol, or any stimulant, is to say the least superfluous, not to mention the resulting pain and reaction.

Sometimes he uses the cautery at a black heat—barely sufficient to burn cotton. The scar from electrocautery is no worse and is frequently much less, than would have resulted had any of the so-called less radical means been tried. Dr. Donovan has used it in a great many cases, has penetrated through the cornea but twice, and then without any bad results.

For nearly three years past, in all corneal ulcers, no matter what the origin, if they appear severe enough to require any further treatment than a mild cleansing lotion, he invariably, after putting in a few drops of holocain, cleans out any excessive amount of necrotic tissue with a curette and uses a short straight electrocautery point at a dull red heat, or even less. The results have been more satisfactory, considering time, reaction, and suffering, than he had obtained with any other method of treatment. In ordinary cases the lightest possible punctures are made all around the edge of the ulcer just in the edge of the healthy cornea, the punctures being about $1\frac{1}{2}$ mm. to 3 mm. apart; also, when necessary, any part in its floor that appears unhealthy is touched. This latter procedure greatly hastens the healing process if there is any necrotic or unhealthy spot in the floor, but if that appears clean this should be omitted. With few exceptions, this is all the active treatment necessary. If after a few days (say two to four) some places appear to have made no progress, these spots should be re-touched. In the rare cases in which the ulcer does progress in some direction, the advancing portion should again be touched by puncturing just in the edge of the normal tissue.

With children I formerly gave chloroform, but now use only local anæsthesia. Spots in the conjunctiva require more holocain than does the cornea. Cauterization can be accomplished perfectly by handling the cautery with the same precaution we

- use the cataract knife, and touching each spot instantaneously. A speculum or a fixation forceps is usually unnecessary; with this treatment the child requires nothing more.

In wounds of the cornea, when it has been completely perforated, cut or lacerated and is *probably not aseptic*, I touch the entire margin of both edges of the wound. If in apposition this coagulates any exudate and forms a protective covering and at the same time cements the edges together.

J. L. M.

BOOK REVIEWS.

SYLLABUS OF LECTURES ON PHYSIOLOGY. By WILLIAM H. FIGLER, A. M., M. D. Professor of Physiology and Pediatrics, Hahnemann Medical College, Philadelphia. *Second Edition*. Revised and Enlarged. 205 pages. Flexible. Interleaved, \$1.50; postage 10 cents. Not interleaved, \$1.25; postage 7 cents. Philadelphia: Boericke & Tafel, 1903.

A well-printed, nicely bound volume; rather more elaborate than a syllabus usually is, but falling short of being a handbook.

This, second, edition after five years' test of the first, is well up-to-date: Sajous' theory of the adrenal system is concisely but well stated. J. L. M.

SAUNDERS' MEDICAL HAND-ATLASES.—ATLAS OF THE EXTERNAL DISEASES OF THE EYE. By PROFESSOR C. HAAB, of Zurich. Second Edition. Thoroughly Revised. Edited, with additions, by G. E. DE SCHWEINITZ, A. M., M. D., Professor of Ophthalmology in the University of Pennsylvania. With 98 colored lithographic illustrations on 48 plates, and 232 pages of text. Philadelphia, New York, London: W. E. Saunders & Co., 1903. Price \$3.00, net.

The fourth imprint of the first (1899) edition has just been succeeded (Oct.) by this revision at an interval of only eight months. This is not surprising to anyone who has carefully examined the book. There is more of a treatise on pathology and treatment in this than in most of these atlases, and it is brought down to date.

Appealing to those whose opportunities do not permit them to see large numbers of cases of external ocular diseases, as well as to students, it is to be regretted that more attention has not been devoted to trachoma. We find only three lithographs of this disease, and one of pannus. Trachoma and iritis are particularly dependent upon experience for their recognition, and their importance is so great that they could not be de-

picted too often in such an atlas; specimens should be presented in close apposition to the diseases which most resemble them. We hope this will be done in the next edition, which will soon be called for if we are to judge by the merits of this.

This volume should be in the library of every physician, whatever his practice.

J. L. M.

DISEASES OF THE URINARY ORGANS, INCLUDING DIABETES MELLITUS AND INSIPIDUS. By CLIFFORD MITCHELL, A. B., M. D. Professor in the Chicago Homœopathic Medical College, Urologist to the Chicago Laboratory for Clinical Diagnosis. Illustrated. Boerické & Tafel, Philadelphia, 103. Price, \$4.00, net.

In this very valuable book considerable attention has been given to pathology, Riesman's classification having been adopted; surgery is not neglected, much attention has been given to minute particulars of diet, climate, and hygiene, and the author has endeavored to specify as clearly as possible what remedies he himself has used, and with what success, while outlining as broad as possible a course of medical treatment—including almost everything recommended by earnest and reliable workers in the field of medicine.

We are surprised that no reference is made to percussion of the renal region, as an aid in diagnosing floating, if not movable, kidney. This was demonstrated to the reviewer by the late Dr. John C. Miner, years before palpation had been brought to its present high stage of perfection, and should be borne in mind; it requires skill and practice to feel a displaced kidney, but the heightened percussion note caused by its absence can be recognized by anyone experienced in examining the chest.

J. L. M.

THE PERVERTS. By WILLIAM LEE HOWARD, M. D. *Second Edition*. G. W. Dillingham Co., New York. Copyright, 1901.

A novel written with the object of diffusing and impressing the lesson that many criminals are psychically diseased and should be confined in hospitals rather than in prisons, although some of their brain centers may be so highly developed as to admit them to the ranks of genius. The crime of bringing such children into the world is strongly set forth.

The reviewer advocates castrating, or spaying, confirmed criminals.*

Although dealing with one of the important questions of this century, it seems to us that this novel is ill-advised and positively harmful. It describes a method of dastardly murder which is a real danger to the community, because this suggestion and teaching may fall into the fertile soil of some pervert novel reader's mind.

The author's agnosticism tends to demoralize immature or young readers, not only by his slurs, innuendoes, and aspersions of all religion (grounded upon his criticism of individuals supposed to be Christians), but by such fallacious teaching as: that being controlled by the love of virtue is a weakness, an abnormality; that "to the normal woman, the intensity of their love would make any past illicit relations pure" [!] that "the real cause of sin is unhealth," and that "the mind is a mere function of a physical organ."

The style is pedantic, abounding in unnecessary, unusual, or obsolete words, which are at times misapplied, at others inaccurate.

Horace Greeley once said to a young writer addicted to foreign words and phrases: "Young man, the English language is fully competent for the expression of any ideas that you are apt to entertain."

J. L. M.

THE PHYSICIANS' VISITING LIST (Lindsay & Blakiston's) for 1904. Fifty-third year of its publication. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street.

As usual this standard vade mecum is published in Regular Edition for 25, 50, 75, and 100 names per day or week; a Perpetual Edition for 1300 or 2600 names, and a Monthly Edition.

J. L. M.

* See his Presidential Address, last February, to the Homœopathic Medical Society of the State of New York, *North American Journal of Homeopathy*, August, 1903.

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